August 1988 / The Naval Aviation Safety Review

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Formation Flight: *The Quiet Killer*

Beginning on page 2

Why I Want to be a Pilot

In writing a theme for a 5th grade assignment, one youngster in South Carolina created a bit of humor we think you will enjoy. First published in the South Carolina Aviation News, it presents a child's view of becoming an aviator.

When I grow up I want to be a pilot because its a fun job and easy to do. Thats why there are so many pilots flying around these days.

Pilots dont need much school. They just have to learn to read numbers so they can read their instruments.

I guess they should be able to read a road map, too...

Pilots should be brave so they wont get scared if its foggy and they can't see, or if a wing or motor falls off...

Pilots have to have good eyes to see through the clouds, and they cant be afraid of thunder or lightening because they are much closer to them than we are.

The salary pilots make is another thing I like. They make more money than they know what to do with. This is because most people think that flying a plane is dangerous, except pilots dont because they know how easy it is.

I hope I dont get air-sick because I get car-sick and if I get air-sick I couldn't be a pilot and then I would have to go to work.

inside approach

Vol. 34 No. 2

Formation flight makes for beautiful photographs but also harbors deadly hazards. McDonnell Aircraft Co. photo via Dwight Timm.

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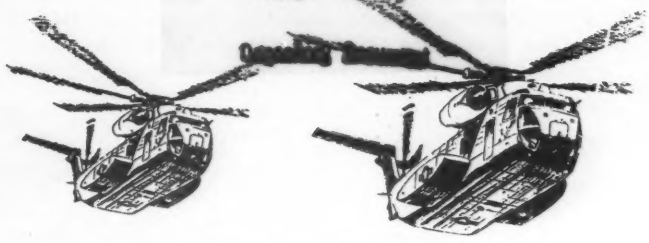

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Approach is a monthly publication published by the Commander, Naval Safety Center. Address comments, contributions and questions about distribution and reprints to:

Commander, Naval Safety Center
NAS Norfolk, VA 23511-5796
Attention: Approach — Code 71

Telephone: Commercial 804-444-7416; Autovon 564-7416

ISSN 0570-4979. The contents should not be considered directives and may not be construed as incriminating under Art. 31 of the Uniform Code of Military Justice. Views expressed in guest-written articles are not necessarily those of the Naval Safety Center. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. It is funded and printed in accordance with all Navy publishing and printing regulations and approval of the Navy Publications and Printing Policy Committee. Second-class postage paid at Norfolk, Va., and additional mailing offices. Approach is available for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

POSTMASTER: Send address changes to APPROACH Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.

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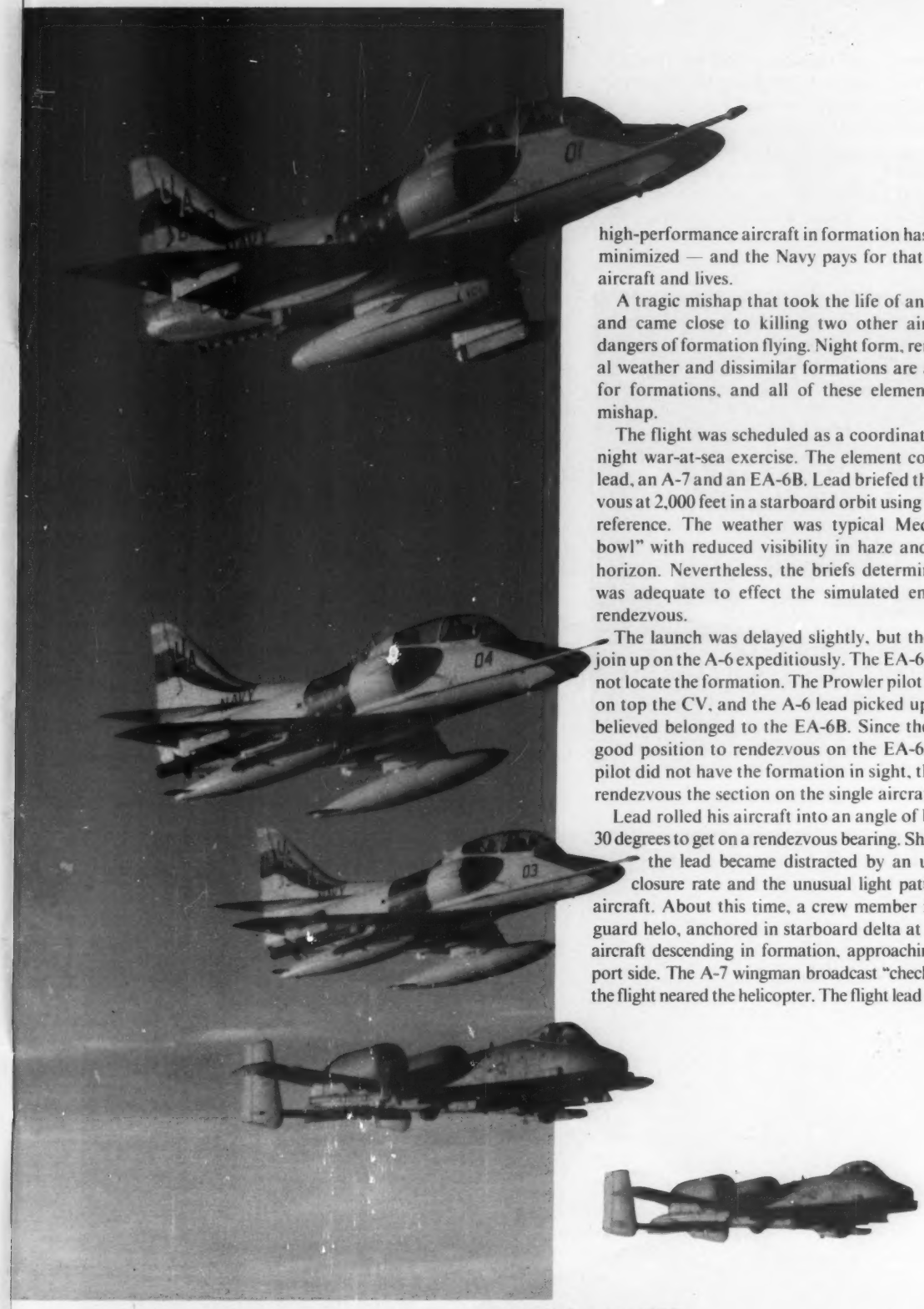
FORMATION FLIGHT:

The "Quiet" Killer

By Cdr. Richard Shipman

WHAT phase of flight in naval aviation has been responsible for the most Class A pilot-factor mishaps in the past eight years? ACM? Carrier landings? Low-level nav? The answer may surprise you. Formation flight, that basic, routine part of naval aviation, has been responsible for 20 Class A and B pilot-factor mishaps in the past eight years. This does not include helicopters or the Navy's flight demonstration team. These 20 mishaps have destroyed 22 aircraft and killed 16 aircrew.

Despite these statistics, formation flying doesn't get much play at safety stand-downs, in safety newsletters or during "there I was" sessions at the club. Most flight leaders assume everyone knows how to rendezvous, change the lead and do the other basics of formation flying, so they don't spend much briefing time on them. Clearly, the mishap potential of joining



high-performance aircraft in formation has been forgotten or minimized — and the Navy pays for that every year in lost aircraft and lives.

A tragic mishap that took the life of an experienced pilot and came close to killing two other aircrew typifies the dangers of formation flying. Night form, rendezvous, marginal weather and dissimilar formations are all high-risk areas for formations, and all of these elements existed in this mishap.

The flight was scheduled as a coordinated strike during a night war-at-sea exercise. The element consisted of an A-6 lead, an A-7 and an EA-6B. Lead briefed the flight to rendezvous at 2,000 feet in a starboard orbit using the ship as a visual reference. The weather was typical Mediterranean "milk bowl" with reduced visibility in haze and with no distinct horizon. Nevertheless, the briefs determined that visibility was adequate to effect the simulated emcon low-altitude rendezvous.

The launch was delayed slightly, but the A-7 was able to join up on the A-6 expeditiously. The EA-6B, however, could not locate the formation. The Prowler pilot called his location on top the CV, and the A-6 lead picked up a set of lights he believed belonged to the EA-6B. Since the section was in a good position to rendezvous on the EA-6B and the EA-6B pilot did not have the formation in sight, the lead decided to rendezvous the section on the single aircraft.

Lead rolled his aircraft into an angle of bank greater than 30 degrees to get on a rendezvous bearing. Shortly into the turn, the lead became distracted by an unexpectedly high closure rate and the unusual light pattern on the target aircraft. About this time, a crew member in the CV's plane guard helo, anchored in starboard delta at 300 feet, saw two aircraft descending in formation, approaching the helicopter's port side. The A-7 wingman broadcast "check your altitude" as the flight neared the helicopter. The flight lead recognized his low

altitude and commenced a 4G pullup from 300 feet. The A-6 bottomed out at 100 feet, but the A-7 impacted the water. The pilot did not eject and was never recovered.

The A-6 pilot had attempted a rendezvous on the plane guard helo, mistaking it for the EA-6. To effect the rendezvous, he had to descend from 2,000 feet to 300 feet in 20 seconds, using angles of bank greater than normal. The wingman must have had his hands full just trying to hang on.

There were a few extenuating circumstances in this mishap, such as the A-6 B/N's inoperative UHF foot switch. The B/N claims that he broadcast an altitude warning passing 1,000 feet, but no one heard it because the foot transmit switch was bad. Nevertheless, the A-6 crew had to bear the brunt of the responsibility. They identified the wrong aircraft, failed to cross-check their instruments during the rendezvous and maneuvered the aircraft in a way that made it difficult for the wingman to provide a cross-check of his own. And if a mishap like this one could happen to this crew, it could happen to anybody. Clearly, there is no such thing as a routine night formation flight, particularly when it involves a low-altitude rendezvous.

Mishaps involving low-altitude rendezvous have not been limited to night time. An F-14 pilot pulled his Tomcat into a stall attempting to get inside his lead's turn radius during a low-altitude circling rendezvous. The pilot could not recover from the out-of-control departure and rode the aircraft into the water. A similar fate befell an A-7 pilot who was trying to rendezvous on his flight lead following the final bombing run. The pilot went acute on the lead and then honked the Corsair around hard in an attempt to salvage the rendezvous. The A-7 departed controlled flight, and the pilot ejected — outside the envelope.

Another area of formation flight that has taken its toll is the lead change. To be sure, it is a basic, elementary maneuver that is done all the time; but if standard procedures and precautions are not followed, tragedy can strike. It happened to an A-3 crew.

Three A-3s were flying in fingertip formation at FL260 in thin IMC conditions. The original flight leader had gone down, so the alternate flight leader, a first-tour aviator, assumed the lead. He rebriefed the flight over the radio, covering the new lineup and procedures for rendezvous and tanking. Although not a standard A-3 procedure (because of the A-3's side-by-side seating), he briefed the tanker to join on

LCdr. Persons

Summary of Formation Mishaps

Aircraft	Damage	Fatalities	Phase	Summary
A-7	A	1	Rendezvous	Wingman hit water on night rendezvous.
F-4	A	0	IMC	Wingman lost sight of lead in clouds.
T-2	A	1	Rendezvous	Student flew into water on join up.
A-7	A/B	0	Refueling	Both a/c moved simultaneously to start refueling and collided.
EA-6B	A	3	IMC	Wingman lost sight of lead in IMC.
A-7	A	1	Rendezvous	Pilot departed a/c attempting acute rendezvous off target at 100-200 feet AGL.
F-4	A	2	Rendezvous	Wingman stalled during low/slow rendezvous.
TA-4	A	1	IMC	Flight leader lead student solo into IMC and subsequent unusual attitude.
F-4	A/B	0	Rendezvous	Aircraft collided during join-up for RTB; wingman lost sight of lead.
OV-10	2A	0	Landing	Wingman overtook lead on straight-in approach and collided with lead.
F-14	A	2	IMC	Lead became disoriented and pulled away; wingman crashed into high terrain.
A-4M	2A	0	Refueling	Dash 4 and Dash 5 collided switching positions
F-14	A	1	Rendezvous	Wingman departed a/c during low alt rendezvous.
F-4	2A	0	Lead Change	Wingman failed to maintain sight of lead.
F-18	A	1	IMC	Wingman flew into water at night during form evaluation flight.
T-2	A/B	1	En route	Wingman attempted rollover to parade position and collided with lead.
A-7	2A	0	Lead Change	Collided during lead change.
A-3	A/B	2	Lead Change	Pilots failed to pass lead positively and collided.
F-14	2B	0	En route	A/C collided setting up for photos.
F-4	2B	0	Rendezvous	A/C collided during night running rendezvous.

his right wing. Apparently, the flight lead felt that this lineup would simplify the planned in-flight refueling.

After level-off, the navigator in the tanker aircraft on the right wing commented, "This stuff doesn't look too thick; let's start tanking." The navigator in the lead aircraft (not the pilot) replied, "OK, you guys have the lead." The pilot of the tanker rogered that he had the lead, but the pilot of the lead aircraft never acknowledged the lead change, nor did the navigator of the lead aircraft coordinate with his pilot prior to passing the lead. In fact, the navigator stated in post-mishap testimony that he observed the lead pilot still concentrating on his instruments after the tanker had assumed the lead.

Thirty seconds after the lead change, the tanker and former lead A-3 collided. The tanker had its port engine ripped off and sustained other serious structural damage, but it was able to land successfully. The former lead A-3, however, went into a diving spiral and did not recover. The navigator and crew chief were able to bail out, but the pilot and EMCO did not, or could not get out and were killed.

A lead change is not an inherently difficult maneuver, but certain basic precautions must be observed. The lead change in this mishap was initiated by the navigator without coordinating with the pilot, and the passing of the lead was not positively communicated and acknowledged by both involved pilots. These are basic but — as was proven in this mishap — critically important procedures that must be followed regardless of a crew's experience level.

Several mishaps have occurred when members of the formation have lost sight of each other during flight into IMC conditions. A section of F-14s was flying formation on three A-6s during a night strike escort flight. The flight was flown over sparsely populated land in marginal VMC conditions with restricted visibility in haze and no horizon (in other words, vertigo-inducing). The F-14 section flight lead, who had been fighting vertigo the entire flight, decided to close up the formation when he saw the A-6s enter a scud layer. About the same time the A-6 lead started a descent in an attempt to remain VFR. The F-14 lead lost sight of the A-6s and became totally disoriented. He went into his cockpit to try to reorient himself and found himself in nose-low, left wing down attitude. Fighting to control the aircraft, the lead broadcast "I've got vertigo real bad, I'm pulling up," and started a 3-4G pullup still in a 30-degree angle of bank. His wingman, no doubt doubly disoriented, could not stay with his lead through the pullup and crashed in a nose-down attitude into hills at an elevation of 7,200 feet. Neither crew member ejected. The usual challenges of night formation were complicated by the wingman's lack of recent night formation time.

In another IMC mishap, a flight of three F-4s became separated when they flew into dense clouds while in a V formation. The left wingman broke away to the left and the right wingman to the right, as dictated by squadron procedures. The right wingman, however, found himself in a climbing 60 degree angle of bank approaching an unusual attitude. He rolled out of the bank and leveled off. Shortly thereafter, the nose of the right F-4 contacted the lead's tail as the aircraft came back together. The wingman's aircraft became uncontrollable, and both crew members ejected.

Not surprisingly, refueling operations offer many opportunities for collisions, with multiple aircraft flying formation on the tanker waiting for a plug. Does anyone forget his first night refueling flight? As many as six aircraft would be stacked up on the tanker, bobbing and weaving as the gaggle traveled along the race track refueling track. Tailend Charlie usually had to use all quadrants of the control stick while slamming the throttle between military and idle just to stay in the same sky as the rest of the flight. The actual tanking was easy compared to the formation flying.

The refueling formations become a little less hectic with experience, but no less dangerous. A flight of five A-4Ms was refueling from a KC-10. Dash 4 and Dash 5 were directed to swap positions to correlate with their refueling priorities. In the process, Dash 5 failed to maintain contact with Dash 4 and the two collided. Both aircraft were lost. In another training mishap, an A-7 crashed and another was extensively damaged when the middle pilot in a three-plane echelon tried to move into refueling position prematurely. Refueling operations require a good brief, tight control over aircraft movements by the flight lead, and good flight discipline and lookout by all the receiving pilots.

The flight leader must accomplish the tactical mission, but he must also be smooth and considerate of his wingmen. He must fly his own aircraft while simultanously thinking for the whole flight and flying in a manner that enables his wingmen to follow and provide a cross-check of their own. The wingmen have responsibilities too, but their scan is primarily on the lead aircraft, so they must trust him to keep them out of trouble. The A-6 pilot who tried to rendezvous on the helo and the F-14 leader who experienced vertigo failed in this regard; they were not the only ones.

A training command instructor was leading a student solo in an early-stage formation flight. The flight inadvertently entered IMC with heavy rain and hail. The instructor, concentrating on his wingman rather than on his instruments, got into an unusual attitude: 60-70 degrees nose low, 60 degrees left wing down. A about 5,500 feet, the instructor recognized his situation and started a recovery. He bottomed out at 1,300 feet, but the student was unable to recover, crashed and suffered fatal injuries.

All formation mishaps are unfortunate, but the most frustrating are those that occur from poor flight discipline. Two F-14s collided while maneuvering to set up for taking pictures. The lead pilot was trying to take pictures while flying. Two T-2s were lost when the wingman attempted a rolling crossover to a parade position and struck the leader. Two A-7s did an unplanned low-altitude fly-by for a ship. Passing

the bow, the lead pulled up and initiated an aileron roll. The surprised wingman could not follow his lead, and the two aircraft collided.

A final area of formation flying that needs attention is the homefield break. Nothing looks more dramatic than a flight of Navy aircraft recovering at homeplate in a tight, symmetrical, stabilized formation. Unfortunately, that picture of naval aviation professionalism is terminally shattered if the aircraft collide. An F-4 leader apparently forgot that his flight was in a diamond formation instead of an echelon when he broke first — into his wingman. An F-5 pilot flying in a "V" formation on an F-14 misjudged wingtip clearance and clipped the Tomcat's left wing during the homefield break. Two A-7s came together while flying in a four-plane echelon during a homefield entry following an extended deployment. The combination of turbulence and the wingman's desire to keep it tight resulted in contact between No. 3's starboard wing and No. 2's UHT. Fortunately, the damage was minor.

What can we do to stop the needless loss of aircraft during what should be routine operations? The first step is to realize that flying formation, although done routinely, is not routine. Formation procedures (rendezvous, lead changes, tanking procedures and recovery formations) must be well-briefed for every flight. Just because a certain maneuver is done frequently doesn't mean briefing is unnecessary or that established procedures can be abbreviated or eliminated. Maybe formation flying has become the Rodney Dangerfield of naval aviation: "It don't get no respect." Twenty mishaps are telling us that it is time to change this attitude.

Mishap data has clearly shown us what areas of formation are the most dangerous: low-altitude rendezvous, dissimilar aircraft formations, lead changes, lost sight in IMC, night operations and aerial refueling. When you are scheduled for a flight in these circumstances, think back on all the hard lessons that fellow aviators before you have learned. The following steps should be taken in your squadron to make routine formation flying truly routine:

- Make sure that section and division leader checkout programs are thorough, demanding and not "rubber stamped" based on rank or longevity. (Leads have a special responsibility for safe conduct of the flight and for flying smooth.)
- Have a clear squadron SOP for loss of visual contact during formation IMC flight.
- Maintain currency and proficiency in formation flying, particularly night formation procedures.
- Stress the importance of wingmen maintaining their situational awareness.
- Maintain good flight discipline.
- If dissimilar aircraft formations are planned, make sure they are briefed beforehand.
- Remember the basics of formation flying, and don't shortcut them just because you're not a nugget anymore. Positively pass and accept lead changes. Cross-check instruments on rendezvous, particularly at night. Change positions only on the direction of the leader. Underrun the formation if too acute to rendezvous safety.

Cdr. Shipman, a naval reservist and free-lance writer, is a 727 pilot with Piedmont Airlines, flying out of Charlotte, N.C. A former editor of Approach, he now writes for Approach on special reserve assignment. On active duty, Cdr. Shipman was an A-4 instructor, a fleet A-7 pilot and an assistant flight deck officer.

Taking the PITA out of NATOPS*

It is unlikely that any sort of testing program will result in a ready room full of cheerful test takers.

By Lt. Kip Cinnamon

* Naval Air Training and Operating Procedures Standardization

TWO years ago, I considered synonymous the acronyms NATOPS and PITA (Pain In The Ass). I thought NATOPS meant tedious memorization, annoying tests and dry volumes packaged in hypnotic baby-blue. Fortunately, for both my professional development and life expectancy, my attitude changed.

Not surprisingly, the biggest influence in this transformation was a 15-month stint as squadron NATOPS O.

The attitude shift was neither sudden nor painless. I logged hours of frustration and made many mistakes. However, before I rotate to Div O, I can reflect briefly on building an active NATOPS program.

Approached with open-mindedness and style, NATOPS O can be less of a PITA and more of a challenging position with plenty of chances to make your squadron better.

Predictably, the condition of the existing program directs the initial work of a new NATOPS O. If the program is already planned, active and visible, with a well-lubricated paper work mill, you are fortunate. Learning the job and fine-tuning the program is your mission. Conversely, NATOPS may not be so established. I faced this situation.

In the beginning of a two-year turnaround, the squadron brimmed with multicruise veterans. ACM, power-projection and weapons exercises focused training on tactics, tactics, tactics. System knowledge and procedural expertise were assumed.

I took over NATOPS at the beginning of a significant change in squadron character. The salty dogs rolled; nuggets reported. Work-ups loomed. The training emphasis began to shift.

"We want a program," our XO commanded. "You got it."

Rebuilding a deemphasized NATOPS program seemed daunting at first. Where do you start? I faced blank page with my head full of question marks. I needed goals to guide my efforts.

What is absolutely necessary? Aviators must be qualified. Requirements for aviation qualifications are spelled out in OPNAVINST 3710.7. The administration of instrument ratings, NATOPS quals, physiology of swim quals forms the bedrock of NATOPS O responsibility.

Goal No. 1: Make qual tracking as simple and automatic as possible.

With quals covered, you have to make sure that people know crucial procedures and limitations. Tests are among the best, but most despised, tools.

Goal No. 2: Establish a regular testing schedule.

With aircrew properly qualified and procedurally smart, the promotion of aircraft systems expertise comes next. This area offers broad opportunities for originality and innovation.

Goal No. 3: Incorporate discussion formats into all training AOMs.

Accomplishing these three goals is the primary responsibility of the NATOPS O. Job turnover is also prime time to set standards for yourself. Here were two of mine.

Goal No. 4: Be the answer man.

Goal No. 5: Take the PITA out of NATOPS.

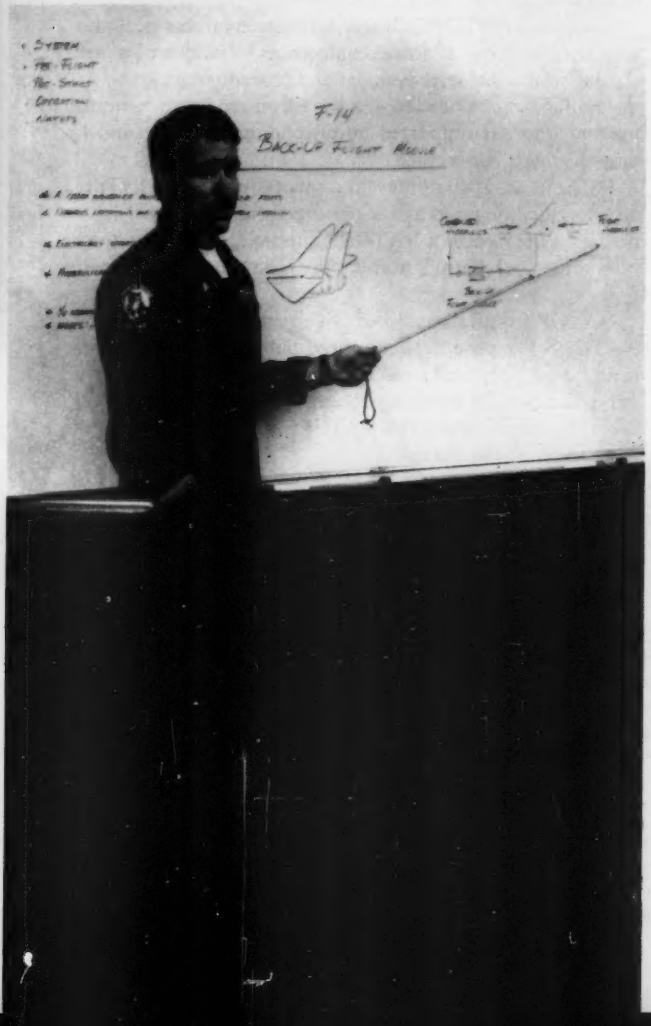
Unquestionably, the job encompasses many duties. Pub custody, NATOPS jackets, NATOPS changes, conferences, turn-quals and more compete for attention. Nonetheless, the early establishment of NATOPS goals and priorities will focus your efforts from the start.

How the NATOPS O develops his goals into a thriving program is a combination of personality, style, and squadron strengths and weaknesses. Diligence, imagination, salesmanship and humor net more success in my squadron. Browbeating, harrassment or acting the know-it-all get nowhere fast.

More important is a willingness to listen. Unfailingly, seniors and peers readily critique program implementation. Taking to heart comments such as "Your PCL drills are too long" and "Your system briefers need better visual aids," helped me tailor training to squadron preferences. After all, the NATOPS O works for the squadron's benefit.

Regardless of his style and personality, the NATOPS O must combine many separate ingredients to administer a successful program. Some aspects of my program worked; some did not.

Continued



Systems briefers share the NATOPS training load.

Basic qualifications must be meticulously managed. I learned the hard way. I overlooked one pilot's overdue instrument qual. The lapse was brought to my attention during a one-way conference with the XO and safety officer.

They made this point: *The command is professionally and morally obligated to certify that aircrew are qualified to fly. Furthermore, the command must ensure aircrew are trained to survive a mishap. The NATOPS O has this for action.* I avoided a re-run of that counseling session.

For instrument quals, I scheduled ground school as far in advance as possible for the maximum number of eligible aircrew. Ideally, using the entire 90-day qual window, only four classes a year cover the squadron. Six classes are more realistic. Coordination between NATOPS, Ops and the ground school administrator is the key to avoiding an end of the birth-month scramble.

At the beginning of the month, aircrew with pending NATOPS quals receive test packages with a one-week completion window. This leaves three weeks to schedule trainers or flights with a NATOPS instructor. Early delivery of tests is an effective reminder. Only one pilot has ever reminded *me* that his qual was pending (a former NATOPS O).

Systematic review of NATOPS jackets helps me keep ahead of the survival quals, for aviation physiology and swimming. Particularly before cruise, class seats must be scheduled well in advance so as not to interfere with work-ups. Marginal paddlers should be warned to log pool time prior to class. I failed to give one pilot this heads up. He was yanked off the flight schedule after he failed two swim requirements. After a week TAD to the pool, he requaled.

Requirements for NATOPS jackets are discussed clearly in 3710.7. Yet, every check-in jacket review fills my wastebasket with out-of-date, unnecessary paper work. Old up-chits, PCS orders to Corpus and T-2 limitations exams only clutter an otherwise useful document. After check-in FOD walkdown, the NATOPS O is required to scan and sign off each jacket annually. I check jackets more frequently to back up myself and the training officer. NATOPS and instrument requals, unit evals and ADMATS are good opportunities for this.

For many people, a test is the biggest PITA in NATOPS. It is unlikely that any sort of examination program will lead to a ready room full of cheering test takers. Nonetheless, tests encourage study and document expertise, which is especially important when trainer time is limited. Considering NATOPS tests as learning tools rather than inquisitions, I use the following guidelines:

- Keep 'em short. I tailor my tests to 15 minutes with five minutes to review the correct answers.
- Announce 'em. A heads-up on the flight schedule invariably causes cracked NATOPS manuals.
- Help 'em. I recall a pilot from another fighter squadron who visited our Ops office for assistance. His NATOPS O had saddled him with a 260-question open book test (required length is 50 to 75 questions). The pilot had difficulty locating information on rear-cockpit displays. His NATOPS O said, "Tough, find it yourself." What a PITA.

Gouge and helpful hints are not the same. There are times for both.

- Log results. An examination record (OPNAV Form 3760/32G) is part of every NATOPS jacket. I record test results here to document training and track progress.

Like many NATOPS Os, I assign individuals specific systems and designate them a system expert lecturer (SEL). Unfortunately, that does not automatically lighten the load for systems training. SELs need to be regularly encouraged.

I use our monthly training plan to assign systems briefs, followed up with frequent reminders and offers of assistance. SELs are also asked to brief mishaps and NATOPS changes that affect their particular system. The best presentations are those that are rehearsed, include visual aids and end with a handout summarizing important points.

NATOPS manual review conferences are outstanding opportunities to learn more about your aircraft and the business of NATOPS. A squadron representative can see how our manuals are improved or impaired. NATOPS conferences assemble high-timers, test pilots, engineers, NAVAIR reps and assorted experts. Discussions cover the history of aircraft problems and solutions and the latest gouge on upcoming developments.

Reviewing NATOPS change recommendations occupies considerable time at these conferences. These inputs are crucial for manual improvement and procedural changes. At the conferences I attended, if a squadron rep was present to push a proposal supported by his command, it was much more likely to be accepted.

Two important attributes for a successful NATOPS O are an encyclopedic mind and a photographic memory. I have neither. When asked a NATOPS question, more often than not, I must look it up. If nothing else, I have become adept at this.

NATOPS duties combined with regular study force the NATOPS O's nose between those baby-blue covers. Over time, knowledge sinks in. For the NATOPS O, this is a personal boon. He learns his aircraft and weapons better than ever. More importantly, this NATOPS expertise is a squadron asset to be readily shared.

Ambitious plans and good intentions cannot build a NATOPS program without front-office support. One NATOPS O told me this story. He had just taken over and noticed the squadron had not completed a boldface exam in months. He passed out the exam during the next AOM. The skipper looked his over and tossed it back, saying "We don't need no stinking boldface."

For those who want to restrict NATOPS training, "supervisory error" comes to mind. There is bad luck enough to wreck our jets. Lack of knowledge about systems, and procedures should never be a contributing factor. A skipper's support for his NATOPS O is the key to ensuring that aircraft launch with fully informed crews in the cockpits. ◄

Lt. Cinnamon is NATOPS officer of VF-143.

Gone With the Wind

By Lt. John Wilson

YOU might think that an IP and a former HAC would have it licked — all kinds of experience — returning from a successful hop and landing just ahead of the CO. What a night!

So we're safe on deck, and Ground clears us to taxi behind the C-130 that is holding short of the runway. Good thing my trusty copilot isn't a beginning student. I'd probably take the controls to taxi behind that beast, especially with this wet deck. Of course, he'll be prepared for lots of prop wash.

"Closing my window," I announce. More prop wash than I figured. At least No. 2 is following the nose of the helo OK. Are we sliding sideways now?

"Hey, I think we're sliding sideways." We've got room to the right.

"Just control it to the right."

"Sliding too much."

"I've got the controls."

"I'm clear right." Let's get off the deck; copilot's still hanging on.

"I've *got* the controls. Coming up."

"SAS off."

"It's OK, no problem. We're under control. Let's just set down past the wash."

"Safe on deck for a second final landing." No, I don't know who said what either.

"Ground, 01, better hold that second H-46 until the C-130 is on the runway. There's too much prop wash here now."

"Roger."

And the rest is uneventful, except for filling out the NAVFLIRS.

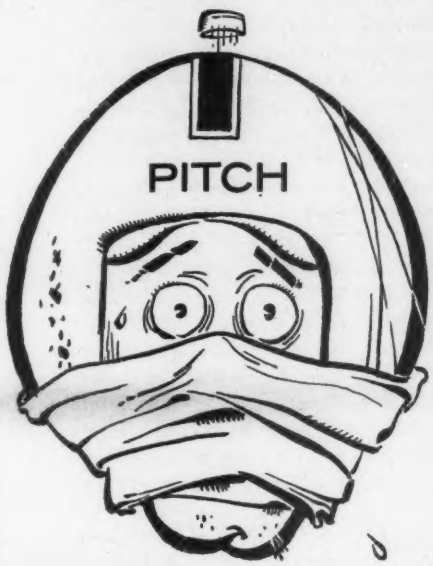
Lack of communication? You bet. Complacent? Uh-huh. Luck? Not a chance — pure skill.

Not once did the pilots mention *out loud* the hazard they were approaching. Both were aware, but neither confirmed the other's alertness. No plan of action was briefed and no contingencies discussed. The HAC assumed a proficiency for the copilot that may have lapsed after four or five months. Both were prepared individually, but not as a crew.

Did anything good happen? During the event there was a positive transfer of controls and good communication of aircraft status ("I've got the controls"; "SAS off"). And some positive action was taken to prevent recurrence ("Hey, Ground!") The troops in the wardroom also got some entertainment at our expense. Now they don't have to find out first hand. ◄

Lt. Wilson flies H-46s with HC-3 at NAS North Island, San Diego, Calif.

. . . Not once did the pilots mention *out loud* the hazard they were approaching. Both were aware, but neither confirmed the other's alertness . . .



Just a Cross-country?

By Lt. Brian Gawne

SO! The skipper has given you the keys to the jet for the weekend. Your bags are packed, and you've called your buds on the opposite coast to let them know you'll be rolling into town, and you're ready to light your hair on fire. NAS destination has your PPR and says they can handle you. You've filed and your NFO has the weather brief. You are ready to launch . . . right? Maybe.

The cross-country is often viewed as a fairly benign event by fleet-seasoned aviators, but my experience indicates otherwise. It seems as though every time our squadron sends somebody on a cross-country, the crew returns with some kind of tale that would raise the hair on the back of Grampaw Pettibone's neck. Could it be that there really is no such thing as "just a cross-country"?

Let's start at the beginning. Do we spend as much time on our preflight planning as we do making arrangements with our friends as to where we will stay and what we will do once we reach our destination? Ask yourself if you closely checked the IFR supplement and general planning remarks for your destination and all possible diverts. Do you know where the VFR initial is or what the VFR traffic pattern is? Or will you rely on approach when you get there? How closely have you scrutinized NOTAMS at all possible divert fields? What are your weather minimums? Did you cover everything in the brief, or better yet, did you even brief? If you assume that it is just a cross-country and neglect preflight planning, you are setting yourself up for something unpleasant.

Brief complete? Let's man up. Read the book, remember the cross-country kit and the credit card, grab your bags and go. Where are you going to stow your travel bag? Are you going to wedge it in the turtleback? Carry it in the cockpit? Will it be an obstruction to normal cockpit operations, or are you assuming that's not really a problem because this is just a cross-country? If you had to eject, would the gear be in the way?

The jet looks OK. Just a few "minor" gripes. Besides, maintenance doesn't have a spare, we'll miss happy hour, skipper said we've got to be back tomorrow, it will take too long to fix, and we don't really need it anyway. Sound familiar? Ask the old-timers about fly-offs and get-home-itis. Don't lower your

standards for a good-deal flight. It would be difficult to categorize a cross-country as an operational necessity at the mishap board.

No bombs or sonobuoys to drop, no intercepts, no low-levels and no ACM. We can relax. Don't you believe it! The cross-country is not as mentally taxing as our normal mission, but as soon as you allow your mind to drift to what a great visit lies ahead, you open the door for errors. If you are doing your job of constantly updating your on-deck fuel, locating the nearest divert, getting weather updates, cross-checking your INS with dead reckoning and in-flight testing all your plane's systems, you will be busy enough. Remember how busy you were in the training command on airways navigation hops? Funny, but it didn't seem like just a cross-country back then. Why aren't we as busy as we were when we were nuggets? Is it just our increased experience or are we neglecting some of our in-flight duties because there is nobody looking over our shoulder?

What about our journey home? Are we well-rested, or did we stay up most of the night trying to pick up some hot potato at the club? What time did I slug down that last brew? Have I thoroughly briefed the plane captain on start procedures and hand signals? Does the ground crew really know how to service my type of aircraft? How closely did we check the intakes and surrounding area for FOD? Was the preflight complete, or will I have to answer for TFOA when I land?

We have all heard of Murphy's Law, and it is especially true for aviators on cross-countries. The one time I didn't have all my pubs because I knew my pilot would have them, he didn't, and we needed them. When I didn't familiarize myself with destination field traffic patterns or do my preflight planning, my destination was clobbered with traffic, and I wound up embarrassing myself on the radios, cutting people out of the pattern and nearly getting a violation. The time I went flying with only a couple of liters of LOX rather than having it serviced, our jet lost cabin pressure at altitude and we had to divert to avoid hypoxia. The time we didn't thoroughly brief the ground crew at an AFB for a hot pit, they didn't close our refueling door and it wound up blowing off the aircraft on takeoff. The time I didn't check with our destination on servicing, all their nitrogen carts were inoperative. I've learned the hard way that the one time you let your guard down will be the time it bites you in the tail.

Lt. Gawne is the TARPS coordinator for Fighter Wing One at NAS Oceana. He served a tour as a RIO in VF-102 flying the F-14A Tomcat.

Although today's carrier flight deck is dominated by jets, two propeller-driven aircraft remain, the E-2C and C-2A. The E-2 Hawkeye is a key player in the modern air wing, and the C-2 Greyhound plays a vital role in bringing the mail, parts and supplies. Grumman's big turboprop twins will be on the flight deck for a long time to come. Avoiding propellers requires awareness and understanding, as well as continuing education of new deck crewmen. Here are stories from two people who were deeply affected by what they saw.

Prop Safety on the Flight Deck and the One that Got Away

By AT1 James R. Geisinger

TURNING propellers are one of the major hazards in the E-2/C-2 community. They spin at 1,106 rpm, creating a nearly invisible scythe on each side of the aircraft. An unwary crew member can easily run into that shredder. At night the danger is invisible, and training is required to give the flight deck worker the knowledge he needs to avoid this danger.

My squadron has a comprehensive instruction program for all flight deck personnel. The first and most important point is called "The Rule": You don't walk through a prop arc, even when it's not turning. Second: If it's absolutely necessary to walk through the stopped propeller of a parked aircraft, you touch the prop to remind yourself of The Rule.

Prop safety training is continuous. Training lectures about aircraft hazards, the safety chain, the need for protective equipment on the flight deck and the consequences of violating The Rule are constantly repeated.

Suppose that it is time to apply The Rule for an early afternoon launch on USS Boat.

The safety chain forms up, and the huffer hose is laid out beneath the E-2's nacelle. The Quality Assurance CPO scans the area as a crowd of people come out onto the flight deck to get the jets turning. It seems that everyone is out here to help with the launch.

Since we're sitting on cat 1, with no other aircraft in front of us, not many people will need to get to the bow. Those guys from the catapult crew come out to get the cat ready for the launch. The bomb elevator still hasn't been closed.

The pilots are ready to start, and the lineman plugs in the huffer hose. The director gives the ready signal and points to the prop. Uh oh — here comes a red shirt (ordnanceman) from the center deck bomb elevator. Maybe he needs something from the deck edge. No, he's making a right turn. He's running too fast. Look out!

When the young AO, with less than one month's experience on the flight deck, ran directly through the prop arc, just as the huffer operator applied the air, we had to wonder just how

USS Midway

effective was our training program? Did the AO see any of our lectures or get any training before working on the flight deck alone? What was he thinking when he ran through the prop?

We have some answers. First, obviously, more training is needed. Good work habits result from good training. We failed to reach this man. The prop-safety lecture is a video broadcast on the ship's TV several times a week. Each department is also required to indoctrinate its people in the rules of flight deck safety. Then, each new worker is supposed to be supervised on the flight deck by an experienced man until the new guy can protect himself.

We attribute this man's survival to the fact that the prop had just started its first revolution when he ran through it. The timing had to be perfect. We know of no other incident where someone successfully ran through the arc of a turning propeller.

The red shirt was thinking about getting something important to complete his assigned job before the launch. He had seen the prop safety brief on the TV, but claimed not to know anything about the safety chain. He didn't see the safety chain that day. He said he saw the blade coming and ducked. Observers say he didn't duck far enough. You can't.

The last blue shirt who tried could tell you — if he had lived. He came out to chock the E-2 after recovery, walked up from behind, put the chocks in place and walked straight through the prop. Since it was winding down, only three blades hit him, but they were enough.

An obituary reading "Seaman Hacked to Death by Aircraft Propeller" awaits all of us who fail to heed the warning "Props kill!" "Hacked to death" is hardly adequate to describe the way one dies in spinning blades.

AT1 Geisinger is the safety petty officer for VAW-122. He is responsible for coordinating many of the squadron's safety programs.

Save a Shipmate

By LCdr. John F. Cullinan

Recently, a young guy, motivated, enthusiastic, wanting to do a good job, walked into a turning propeller and died. What a waste. How many of us have asked ourselves, "Have I told that new person enough to be safe? Should I have noticed the distracted look? Could I have done something — anything — to prevent this tragedy?"

It hurts to think about the parents, about his shipmates, about the anguish they all must feel. Training and supervision are the only preventive measures that ever seem to make a difference. But, supervisors don't grow on trees; we train them. With LMET, Supervisor Safety Training, Petty Officer Indoctrination, MTIPS and all those other schemes we wrote in blood.

The overall Navy training includes how to read instructions, where to find instructions and how to fix the item at hand. Then, each of us must make time every day to reward the members of our team. Take the time to publicly praise the good, safe workers. This thanks must come from the movers and shakers, the division officers, the chiefs, maintenance controllers, LPOs and job supervisors, even though the job took a few minutes longer because the workers read the book.

I know we must rededicate ourselves to doing the job correctly the first time. We must follow the rules, force ourselves to make the time to train, train and train some more. Then, we must reward and positively reinforce the by-the-book, safe evolutions.

Take the time, and save a shipmate.

LCdr. Cullinan is the safety officer for VRC-40.

A Tale

OUR flight of three SH-3H Sea Kings lifted off from NAS South with the prospect of fair skies and following winds. The weather-guessers had promised us only the usual coastal buildups and southerly winds at our cruising altitude for the flight to NAS Mideast. This prediction held true for us as our doppler return showed a stunning groundspeed of 130 to 140 knots at an airspeed of 100 knots. We arrived at our first fuel stop, MCAS Southeast, a few minutes earlier than our ETA and were passed off by Center to the local approach, who offered us a PAR to Runway 23, the duty runway. Declining their offer, we were cleared in for a visual and passed off to tower eight miles south of the field. Tower verified us as a flight of three H-3s and issued our landing clearance, "Cleared to land Runway 5, winds are 210 at 12 knots gusting 18."

"Tower, 610," our flight lead radioed back. "We'll take a landing on runway 5, but we'd like to fly a short downwind and land into the wind."

"Roger, 610 and flight, cleared as requested. Report right downwind." We landed and taxied through the fuel pits to top off for our 3½-hour trip to NAS Mideast.

After getting our second leg's clearance from ground control, we taxied out to the duty, trying to look smart and snappy as an air wing F/A-18 taxied in, finally home from his deployment. After a sharp formation takeoff, we turned north again and joined the airways for the remainder of the trip.

A few calls reassured us that the terminal forecast at our destination was

# of Tail Winds

By Lt. Jeff Funderbork

holding true to that forecast on our DD-175-1. Clear skies but gusty surface winds. Once again we were passed off to the local approach controller from center, who once again offered us a PAR. It seems these bases like to bring in new arrivals on PARs — a good idea, especially if you are unfamiliar with the area and airfield. But the 10-mile downwind and approach just meant more time in the saddle for already saddle-sore pilots; and being familiar with the base, we requested a visual approach, quicker and simpler. "Roger, 610 and flight, cleared to land, Runway 1, winds are 200 at 22 knots, gusting 28."

Was this a conspiracy? Had the tower at MCAS Southeast called the NAS Mideast controller and told him to do this? (I don't think so.) In this case, with runways of 1/19 and 10/28, the tower wanted us to hold short of 10/28, the busy duty runway. But the winds on the field were outside the NATOPS tail wind limits for the H-3. A more sensible alternative would be to fly a short downwind to 19, without overflying 10/28, and take advantage of the helo's short turning radius and slow approach speed to land on the departure end of the runway. This option wasn't offered, and we didn't ask for it. We accepted the PAR to 28. After landing, over drinks at the club with the pilots from an earlier flight, we discovered that one of the crews of that flight had landed on runway 1, and the approach and landing were rather colorful, to say the least. No pilot likes a downwind approach, and tailrotor helicopters just don't handle downwind *anything* well at all.

What can we learn from this day's flight? First, we pilots must not adopt the attitude that the controllers "are out to get us." They just want safe separation. Helicopters complicate it with their slow approach speeds. We are often reluctant to ask the tower or controller for more favorable winds or runways. As a result, we wind up in unacceptable situations that either put us in landing or approach conditions that are uncomfortable, or downright dangerous. We must let the controllers know what we will or will not accept. We must follow our aircraft's NATOPS limitations and understand that traffic at a large, busy airport may require us to be subject to approaches designed for our heavier, faster, less maneuverable fixed-wing brethren. On the other hand, controllers should use the unique capabilities of the helicopter. We don't need 8,000 feet of runway to land or take off.

If we need the runway, we'll request it. A hover takeoff or landing from, or to, *any* position on the airfield suits us just fine. And we'll stay well out of the way of fast-movers, I promise you! ◄

Lt. Funderbork served as NATOPS officer for HS-9. He is currently the schedules officer for HS-1, the H-3 FRS.

No Place to Land

By Lt. Jim Stein

There's nothing like a little sand, sun and sangria to take your mind off winter. When the weather finally cleared, we hit the airways for a flight that was supposed to be a piece of cake . . .

WITH NAS Brunswick buried under one of its worst winters in years, I jumped at the chance to take an early February logistics run to Rota, Spain. I had just completed a six-month deployment there, so I figured the flight would be a piece of cake. Scheduled to arrive on the Costa del Sol at 0900L, I looked forward to a little sun, sand and sangria. We loaded the aircraft only to be shut out the first night by another in winter's series of Maine blizzards. After a 24-hour delay and a lot more cold and snow, things began looking up for our departure.

When I went to file, I expected to hear the usual VFR Rota arrival, and was surprised to find that arrival weather would be 1,800 BKN with three miles visibility in drizzle and fog. As thoughts of any beach action rapidly dissolved, I paid closer attention as the forecaster pointed out the minimal dew point spread. Still no sweat; Brunswick operations provide plenty of actual instrument training, and I felt that my crew was ready for whatever weather Rota could muster. Besides, I had two good alternates in Spain, and Lajes was forecast as a VFR divert en route. The horizontal weather depiction (HWD) didn't look too rosy with icing forecast for the whole route. "Sorry, Chief, I know it's starting to snow again, but let's throw on an additional 4,000 pounds for extra approaches and transit to an alternate." I figured that the weather-adjusted fuel load would adequately cover the proverbial "Mom and kids." With a solid preflight and updated forecast (no changes) behind us, we hit the airways.

The first three hours were spent deviating from course to avoid storm cells while suffering a miserable groundspeed. Once beyond the bad weather, the winds shifted, and we rode a strong tail wind through the night to Rota. Updated calculations, based on the now favorable winds, indicated that we would be on top of Rota with at least 19,000 pounds of fuel. I braced for the inevitable wardroom harrassment for excessive fuel loading and pressed on.

As the sun rose, we could see widespread low clouds over the Spanish coastal region. Approximately 120 miles out, I raised Rota Metro on UHF, and much to my chagrin was briefed that current weather was below minimums: ceiling 100 feet obscured, visibility one-eighth mile in fog. "No problem; the sun's up and the weather should be changing for the better any time now. Besides, we're fat on fuel and still have two good alternates." As we vectored toward final on a GCA, I

could see the ground every now and then, so pucker factor was not yet a player.

With my experienced, NATOPS-qualified copilot in the left seat, we commenced the approach to runway 28. At the 200-foot decision height, there was no forward visibility and only patchy marginal visibility peripherally. While executing the wave-off, I spotted the threshold of runway 10. Since winds were calm, I immediately requested a PAR to runway 10. The first 1,700 feet of the runway was closed, so approach control was restricted to providing an ASR approach strobe with an MDA of 340 feet. We requested that the runway and approach lighting be turned up full, but were still unable to gain the runway environment visually.

While executing the second wave-off, the NAV/COMM called Metro for a weather update for all available divert airfields. I decided to try another ASR to runway 10 because I felt the fog was thinnest at that end of the runway. Visibility was now being reported as one-sixteenth of a mile. The co-pilot had flown two nice approaches, and now I figured that it was my turn to earn my flight pay. I briefed that I would fly the approach while he backed me up down to minimums. If he acquired the runway, he was to take control of the aircraft and make the landing.

In order to conserve additional fuel, we delayed gear and flap extensions until established on final. When this approach and an additional ASR approach to runway 10 failed, we had reached decision time. We had sufficient fuel to either hold over Rota for several hours or divert to our primary alternate and shoot several approaches. The NAV/COMM informed me that the weather at Zaragoza AFB was above minimums and was forecast to remain so during our transit. With no reliable estimate of when the fog would burn off at Rota, I elected to divert to Zaragoza.

The forecast at Zaragoza at our arrival time called for 900 scattered, 8,000 scattered, 25,000 scattered, with three miles visibility in haze. We departed Rota at max range airspeed and leveled at FL200. We had 13,500 pounds of fuel and only a little more than an hour of transit remaining, so the pucker factor was still not tremendous — until I called Torrejon Metro en route for a weather update. I was told that Zaragoza was now 600 feet overcast with 900 meters visibility — pretty thick haze if you ask me. The transit had not revealed any substantial patches of clear ground over Spain, and this fact really got the attention of everyone in the flight station. Still, 600 overcast is no problem when a PAR is available. But Murphy was about to rear his ugly head again.

The Zaragoza approach controller's first words were "Be advised that approach radar just went down, and the field is now reported below minimums." Without radar vectors, we had to shoot the full arcing TACAN approach to an ILS final

approach. We again delayed flaps and gear to conserve precious fuel and on final contacted the tower. Weather was now reported at 100 feet obscured with 100 meters visibility, and I was not particularly happy at decision height when I knew we were not going to see Zaragoza today. On the missed approach I noted that the fuel remaining was now 7,500 pounds. With no joy with Zaragoza Metro and Torrejon out of VHF range, we were rapidly running out of options. VFR on top of Zaragoza, all we could see to the horizon were low clouds and fog. Extremely low fuel and observed weather didn't make it prudent to fly another full TACAN arcing approach to the ILS at Zaragoza. I declared minimum fuel with Center and requested Barcelona weather. Available charts indicated that Barcelona was the best Spanish alternate for which approach plates were available in the aircraft. We turned to the east and prayed for better weather.

When my request for "Barcelona direct" was met by circuitous routing, I found that reporting minimum fuel elicits no greater priority handling in Europe than in the United States. We continued to request a weather update for Barcelona and noted that remaining fuel was less than 6,500 pounds. The fuel totalizer gauge was now a permanent part of our instrument scan and appeared to have doubled in size. Discussing all possible endings to our situation, the entire crew reviewed procedures for ditching and bailout.

After a short discussion on performance, endurance and crossfeeding in a low-fuel state, I decided to loiter the No. 1 engine to conserve fuel and to take advantage of three engine Max range fuel flow at our unexpected light weight. A declaration of "emergency fuel" to center generated immediate response. The previously unavailable weather for Barcelona was received within minutes, and Barcelona Control began discussing available airfields.

Although we had maintained a fuel log throughout the flight, apprehension kept the flight engineer's hand hovering over the fuel panel to discontinue crossfeed in an instant. Hardly able to believe that we had ended up in this situation, we could almost hear Grampaw Pettibone wailing "Jumping Jehosophat" about these fuelish young naval aviators. Barcelona Control finally offered vectors to Reus, a Spanish military airfield 40 miles closer than Barcelona. Reus was reporting weather as 2,000 feet scattered with 9 km visibility. We scrambled for charts and the IFR Supplement, and found that the runway at Reus was 7,200 feet long and 148 feet wide, but that there was no available DOD approach. Hoping that Mother Nature wouldn't cut us out of this pattern as well, we requested radar vectors to final.

On descent we broke out and got a visual on the airfield at approximately 10 nm. Not wanting to delay the approach, and with less than 800 pounds remaining in tank No. 1, we decided to leave the No. 1 engine shut down. We followed vectors to final and made an uneventful three-engine landing.

On rollout the fuel totalizer indicated 5,300 pounds, of which 300 pounds were trapped in tank No. 5. Needless to say, we were one very relieved crew to be safely on the deck.

Reus was a very small airfield, and our arrival was much like the circus coming to town. After fueling and conducting an impromptu static display, we obtained a weather briefing via phone patch to Rota Metro. Rota was now VFR (of course) and awaiting our arrival. After an uneventful short flight, our day ended in Rota nearly 18 hours after our departure from Brunswick.

Quite a few factors went into the development and resolution of this scenario, and unfortunately old Murphy was a consistent participant. To our advantage were the additional fuel put aboard in Brunswick, the strong tail winds encountered en route to Rota, and the availability of Reus at the most critical juncture. To our detriment were the initial three hours of bad weather, the fog at Rota (compounded by runway construction on runway 10 — no PAR), weather deteriorating rapidly to less than minimums at all airfields, loss of ground control radar at Zaragoza, and initial circuitous routing towards Barcelona. As much as I would like to say that there was something I could have done differently to prevent this scenario from occurring, I don't feel that there was. Normal preflight planning for fuel reserves based on available weather forecasting would probably not have allowed the positive ending for this abnormal flight. As much as preflight planning precludes poor performance, it never hurts to have just a little bit of luck. ◄

Lt. Stein is a patrol plane commander and mission commander of VP-26's Combat Aircrew 9. He is also a P-3C UII instructor pilot and VP-26's quality assurance officer.

Bird strike! Bird strike!

By 1st Lt. James D. McCary, USMC

BIRD strike! It's part of every low-altitude training (LAT) brief, and it's one of those briefing items that makes you think, "That'll never happen to me." Well, this time it did happen to me!

The day after Thanksgiving, the operations officer and I were scheduled for a weekend cross-country to NAS Southeast. The first day was great! We flew two LAT sorties and a third instrument sortie to Southwest AFB. After a good meal and a good night's sleep we were on our way to NAS Southeast.

Flight lead briefed and led the first sortie, which took us into Big City AFB. His brief, as do all LAT briefs, included bird strikes, low-altitude loss of thrust and SAR efforts.

After an hour turnaround at Big City AFB, we briefed for our second LAT sortie. After takeoff, I joined up in a cruise position and stayed there until we descended to begin the VR route. As we started the route, I took up a combat spread position on the right. As we flew through the first three checkpoints, lead commented on the amount of bird activity. I thought to myself, "Bird strike? Not me!"

Then I saw a black dot — almost the way a bug appears before smashing into your car windshield. There was a loud boom and every thing went red. My initial reaction was to eject, but the wind blast cleared the blood and feathers off my visor, and I could see that the plane was still flying straight and level. So I pulled the nose up, throttled back and checked the engine instruments, which indicated normal. I transmitted, "I'm hit, I'm hit." Lead said, "Calm down and relax. Just fly the plane."

The bird, a turkey buzzard, had smashed through the left side of the windscreen, leaving a big hole. The turkey buzzard, or parts of him, struck me in my left arm, shoulder and chest area. Blood and parts of the bird were everywhere, and I couldn't lift my left arm; it was numb. I could move my wrist and fingers only.

After looking my plane over, lead joined on me. I turned the volume of the radios full up and lowered the seat but still had a difficult time hearing because of wind blast. Lead tried to get me to change radio frequencies, but I couldn't because the radio was malfunctioning. Since we have two radios in the Harrier, that was not a problem. Lead told me to fly on his wing and he would make all the radio calls.

We headed for Southeast AFB, which took us 20 minutes. We flew there at about 2,000 feet AGL and 200 knots and set up for a straight-in approach from six miles out. I planned to do a 60-degree fixed-nozzle slow landing. The plane was flying normally until I put the nozzles down; then I started getting vibrations in the cockpit. I checked the engine instruments, and they checked normal with good engine response to throttle movements. So I set the throttle and did a fixed-throttle approach to an uneventful landing.

Chances are that you will never encounter a bird strike. But if you do, will you be ready? The time to prepare is on the ground, before you take off, because you never know when it will happen to you!

1stLt. McCary is the Training Officer for VMA-513.

Crosswind landing:

BEWARE!

By Lt. Brian E. Cabral

OUR LAMPS MK I detachment was operating from a *Spruance*-class destroyer during the month of January participating in Fleetex 1-87. At this time of the year, the Caribbean Sea offered a welcome respite from winter operations at NAS Norfolk. We flew 95 hours in 15 days of ideal flight conditions. On this afternoon, we had just completed an hour and a half of ASST without encountering any contacts of interest. One hour of fuel remained, and we decided to practice self-contained approaches (SCAs) in order to meet our air crewman's training requirement for the month.

During the second SCA, we disengaged the automatic stabilization system (ASE) for a little "ASE-off" practice. We continued shooting SCAs for about 20 minutes when the tower unexpectedly called "green deck." Taking advantage of this opportunity, we requested and obtained approval for multiple ASE-off landings. Things looked great as we knocked out the landing checklist. It was midday, the sky was cloudless, the sea was calm, the winds were steady, and we were well rested.

In keeping station within the battle group during this exercise, our ship had not been able to dedicate a great deal of time to maneuvering for favorable recovery winds. This afternoon, we got lucky. The battle group cruised almost directly into the wind, creating a good relative wind over our deck while the ship maintained station. We would get a little DLQ practice at the end of this hop.

The tower called winds as "two zero to port at two five, pitch one, roll one."

Although the wind was from the ship's port side, we opted for a port to starboard approach so I could shoot the first landing. The HAC checked the ASE-off recovery wind limitations in his NATOPS pocket checklist and noted that, although the wind was in the envelope, it was pushing the edge. I would have to keep an eye on the wind pushing against our tail on final and over the deck.

The approach proceeded routinely as I transitioned to a hover over the deck. I had left cyclic trim into the wind to eliminate drift over the deck and a larger than normal amount of right pedal in to maintain heading on the line-up line. The hover was not as smooth as an ASE-on hover, but we were, nevertheless, in the circle and cleared to land. I gently lowered the collective and simultaneously added right pedal to maintain line-up. As we descended, the tail kicked out wildly to the left. I reacted immediately and brought us back into a normal hover.

It scared the hell out of me, but I surmised the tail swing must have been due to rough control inputs, so I started down again, determined to be steadier this time.

"SWOOSH!"

The nose spun right again, and this time no amount of left pedal input was going to stop it. With full left pedal, the nose was still turning to the right. It was nearly catastrophic. While the nose went to the right, the tail swung uncontrollably to the left and stopped only a few feet short of the hangar face! Nothing that I had done caused the rotation to stop. It stopped because the tail rotor was so close to the hangar face that the wind no longer impacted upon it and we had regained tail rotor authority.

"I'm waving off!"

There was no way that I was going to try another landing, so I threw in left pedal, briefly reestablished line-up and waved off to starboard. It all had occurred within a matter of seconds.

Once safely established at 400 feet, we called the tower and asked for a recheck of the relative wind. Tower replied, "Helo 345, stand by, you have a red deck while the ship maneuvers for new winds."

The ship steadied up with the wind on the nose at 20 knots as we reengaged the ASE. The HAC shot a right seat approach and executed a perfect landing.

What had gone wrong? We debriefed the hop with the helicopter control officer and focused primarily on the last five minutes of the flight. We were both very interested in determining why such a dangerous situation had resulted while executing a routine VFR landing and why, after calling the deck "green" and allowing us to attempt to land, the ship immediately came to a new Foxtrot Corpen without being requested to do so by the air crew.

The key was the relative wind.

"Always know your relative wind!"

I had this adage drilled into my head at every phase of the helicopter pipeline. Crosswinds and tail rotor configured helicopters make interesting aerodynamic situations. A bad crosswind can induce a loss of tail rotor authority. Over the deck of a small boy, it can be a LAMPS pilot's nightmare. The HCO discovered, within a few seconds after my aborted landing, that the relative wind was not 20 degrees to port at 25 knots but rather 20 degrees to port at 35 knots.

Somewhere in the chain of communication from the signal bridge to the helicopter control tower, the wind measurement of 35 knots became 25 knots. I had attempted to land in winds that were out of NATOPS limits by 10 knots. We possibly suffered loss of tail rotor authority over the flight deck and almost struck the hangar face with the helicopter tail boom.

After a lengthy debrief, our thoughts on our near catastrophe follow:

Environmental clues: Prior to landing we looked for environmental clues. The ship's signal flags concurred with the call of 20 degrees to port at 25 knots in that they pointed to that general direction and they were flying out straight. A flag, however, is no substitute for an accurate anemometer reading or a wind sock. Can you distinguish between a flag in a 25-knot wind and one in a 35-knot wind? A flag may not know the difference between any wind over 20 knots but your tail rotor will and it will let you know fast!

NATOPS: The "green deck" passed to us was within the envelope for a port to starboard, day-VFR, ASE-off landing, but not by a great margin. The SH-2F NATOPS manual says that a tail rotor vortex ring state may develop when hovering in a port to left rear quarter crosswind of 10 to 35 knots. Loss of tail rotor authority results because the tail rotor must work in its own sidewash. *Pushing a NATOPS limitation is not sound judgment.* Additionally, when lowering the collective for the two attempted landings, I needed to be more aware that the excessive right pedal required to maintain line-up would no longer be required as the helo and tail rotor dropped below the hangar. The ship's superstructure, including the hangar, make for a formidable wind block and once the helo drops below the top of the hangar it will no longer feel the wind.

Ship/Det coordination: This was our first deployment aboard this ship and the first time that the ship had embarked a LAMPS det in over a year. Aside from the traditional week-one workup, we had extremely limited experience in working with each other. How well do you know your ship's company and operating procedures? Now we know how our ship operates. Is the ship's company, including the most inexperienced quartermaster, aware that a 10-knot discrepancy can make the difference between a safe landing and a catastrophe?

Headwork: At the time, our decisions seemed like the products of good headwork and conscientious airmanship. It was daytime, VFR, the sea was calm, and the winds that we *thought* we were working with were favorable for both port and starboard landings.

We outsmarted ourselves into a crosswind that induced loss of tail rotor authority over the deck and set ourselves up for a wave-off that wasn't into the wind. ◄

Lt. Cabral flies H-2s with HSL-34's Det 7.

. . . Two more waves crashed across the bow, and each time the LSE was drenched with water spray . . .

Where's the Flight Deck?

By Ltjg. Stephen J. Vissers

I HAD just checked aboard my first squadron. The West Coast FRS had blessed me PQM two weeks earlier; now I was ready to step into an H-3 operational environment. Ready to detect, localize and destroy enemy submarines. Ready to instill fear in the heart of any submarine commander.

The squadron gave me a few days of orientation to get aquainted with CV life before I was scheduled for my first flight. I had to prove myself capable of basic shipboard navigation before they would let me try airborne navigation. At last, I could make it from my rack to the ready room and wardroom without getting lost. I was ready to fly. Finally, I could wear my flight suit.

I walked into the ready room ready for my first brief. My HAC looked like the Great Santini. He had over 1,400 hours in the H-3 compared to my 57 hours. He gave a thorough NATOPS brief in which almost every possible situation was discussed. I listened intensely, with that wide-eye enthusiasm of youth. I asked lots of questions; I already knew some of the answers, but I just wanted reassurance.

After all, it was my first flight, and I didn't know what to expect. The more interested I looked with each question I

. . . Let's see, saltwater plus gas turbine engines equals compressor stall. Compressor stall!

Compressor Stall!

By Lt. Kevin B. Lynch

WHEN I was told I'd be crewed with the nugget, I had mixed emotions. It was a two-sided coin; the down side was giving up the security of flying with another seasoned pilot. The up side was the challenge of training a nugget, a task usually handled by those who wore oak leaves in our squadron. The night before our first flight, I mulled over the challenge ahead and decided there were two goals I'd like to achieve: to make him the best pilot this squadron ever had and to stay out of Approach magazine in the process. So much for goal number two.

It was hard to tell which of us was more nervous about making a good first impression (even helo drivers have egos). The SDO brief was a dream come true — a hot pump crew switch (HPCS) into three hours of Papa Golf in ideal weather conditions. What could be easier? I gave the most thorough brief of my career, punched the charts and reviewed the ADB with a critical eye. Goal number two forced me to leave no stone unturned.

While waiting for the HPCS, we discussed cockpit coordination and my philosophy on flying. Everyone has an equal say when it comes to aircraft safety, and never assume I'll save your seat. As we were leaving the ready room for the HPCS, the SDO informed us that air ops had added on a log run to "just drop off a few pounds of mail aboard a USNS, nothing major."

After an uneventful crew switch and takeoff, we were comfortably settled in starboard D. While my copilot learned the art of droning, I reviewed the Shipboard Aviation Facilities Resume and briefed the crew on small deck landings. The USNS didn't look like a difficult ship to land on, just different because the landing area was on the bow, and it required a cross-deck landing. There wasn't the usual burble-inducing superstructure to contend with, so there would be plenty of clean air and maneuvering room. Who could ask for anything more? Two hours later, the CV's recovery was complete.

"Boss, Speargun 612. Request permission to leave Papa Golf for tasking. Estimate 30 mikes. Will monitor this frequency."

"Roger, 612. You're cleared to proceed. Next recovery in 50 mikes. Report your return."

"612, Wilco."

X-ray, Speargun 612. Request pigeons and flight following to Romeo One Tango."

"Speargun 612, this is X-ray. Roger, your pigeons are 055 for 36. How copy?"

"612 copy."

Wait a minute, things are going too smoothly. Time for a quick double-check. Fuel? There's more than enough to complete the mission. Time? Fifty minutes is more than enough time to complete the transit, just keep the deck time to a minimum. Power available? The chart said dump a thousand after takeoff, and you can hover; we've burned over 2,000 in starboard D. We're on our way.

Here we are, but where's the ship? A quick call to X-ray, new pigeons and we're there. Comms are established, and the landing checklist is complete.

"Romeo One, 612. Say winds."

"612, Romeo One. Winds are 180 relative, 5 to 7 knots. Are

these acceptable?"

Geeze, not exactly what I'm used to. Time's getting short, the winds are well within the helo's limitations, and the deck is plenty big. How much difference could it be from landing in calm winds at Cubi?

"Romeo One, 612. Request green deck. Right seat landing, gear down and locked."

"Roger, 612. Right seat, gear down and locked. You have a green deck. Pitch two, roll two."

"612, Roger."

When we were halfway down the approach, a light seemed to flash in my brain as if to signal that goal number two, to stay out of Approach magazine, was in jeopardy. Three-quarters of the way down, the rapid increase in vibrations, pedal and torque told me why.

"612 waving off."

"612, Romeo One. Roger, waving off."

What was I thinking of when I accepted those winds? My planned profile was based on winds of at least 15 knots, not a slight tail wind. That was a close one.

"Romeo One, 612. Request winds 45 degrees to starboard if possible."

"612, Romeo One. Ship's coming to starboard. Estimate five mikes until you have a green deck."

"612 standing by."

We really should be heading back for our Papa Golf commitment, but if they're going to go through all the trouble of getting us winds, the least we should do is try one more approach.

"612, Romeo One. Winds are 65 degrees to starboard at 26 knots. Pitch two, roll two. You have a green deck."

Perfect! Double-check the gear down. This looks more like it. Over the deck, cleared to land. Tail wheel, left main mount, right main mount and whoosh — a bow wave sends up a sheet of spray, momentarily blotting out the LSE. It's too late to lift; they've already started to chock and chain us.

"Quick, get the @#*$ off."

Whoosh — another wave sends up a sheet of spray. Why me, Lord?

Come on, hurry it up! Mail's off, after station's locked and ready for takeoff."

Whoosh — another wave. Don't rush now; check the gauges. Normal. How do the engines sound? Normal. If everything is normal, why am I getting another flashing light in my head.

Let's see, saltwater plus gas turbine engines equals compressor stall. Compressor stall! When in doubt, brief. My voice went through three octaves while briefing the crew on what to do if we get a compressor stall in the hover. The crewmen were told to brace themselves, and the copilot was to keep his hands on the speed selectors and be ready for the worse.

Takeoff checklist complete, here goes nothing . . . or everything. At 20 feet over the deck, we experienced the worst. There was a loud bang followed by rumbling, and the No. 1 engine torque dropped to 40 percent.

My copilot responded to the call for full power, both times. Despite seeing him advance the speed selector, I called for full power a second time because the engines didn't sound any louder. For a second I felt relieved. We were still maintaining a hover over the deck, thanks to a low DA, a light bag of gas and lots of wind. The gear was already down, and the next step was obvious — land.

Surprise! A louder bang followed by more rumbling, and the helo wallowed over the deck. No. 2 engine torque slowly dropped to approximately 40 percent, and rotor RPM dropped to 95 percent. It was getting quiet fast. The only emergency procedure that came to mind was one learned way back in primary helo training — twist, freeze, puuullll — as in a cut-gun from a hover.

As we settled to the deck, the scan became VGI, LSE; VGI, LSE; LSE, LSE. We landed within the landing area with no damage to the aircraft. As soon as we touched down, I applied the rotor brake to stop the oscillation (and the nightmare). After the blades stopped I noticed No. 2 engine was still running, but at ground idle. Ooops! Speed selectors off, post landing and shutdown checklists reviewed, now it's time to shake on out of the helo.

It's amazing the emotional gamut you go through when you come close to putting the only airborne SAR asset in the drink. While you're patting yourself on the back for landing the helo safely on the deck, you're kicking yourself in the rear for getting into the situation in the first place. As it turned out, doing a cut-gun over a moving deck was the easy part. The hard stuff was soon to follow.

Getting the word back to the squadron required relaying information through several ships. Not surprisingly, the message received wasn't exactly the message sent. Getting maintainers aboard the USNS was difficult because our helo clobbered the landing area (a dozen merchantmen solved that problem). Eventually, we were able to get them aboard, and after two days, three aircraft fresh-water wash downs, more engine fresh-water washes than I care to think about, a new battery, and an extensive inspection by maintenance personnel, we were ready to return to the CV (and the inevitable questions).

After a satisfactory hover check, we began a return flight that could only be described as lasting a short eternity. Every little engine groan and transient needle deflection was viewed as a portent of disaster. Keeping true to some unwritten rule, the Boss had us do a couple of laps around starboard D before final recovery and a hover landing to spot 3. Believe it or not, it felt good to be back aboard the boat.

So, what did I learn? Plenty! Nothing is more important or crucial to a safe flight than a solid brief. It should set the time and get the crew in the right frame of mind for flying. Granted, you can't brief everything, but time spent in the brief will be time saved during an emergency. Unfortunately or fortunately, depending on your point of view, my reason for being well-briefed was based on vanity, not habit. Also, stick to your brief. Don't let time, or the lack of it, force you into doing something as stupid as attempting a downwind approach to an unfamiliar ship. If it sounded good during the calm of the brief, it should work during the tumult of the mission.

Lt. Lynch is a helicopter aircraft commander for the HS-12 Spearguns aboard the USS *Midway* (CV-41), homeported in Yokosuka, Japan.

. . . We were thrown into an uncontrollable 90 degree angle-of-bank turn to the right, then a 90 degree angle-of-bank turn to the left. It was like some sort of monster had grabbed our plane in midair and twisted it from side to side . . .

A Teeny-weeny Mistake

By Lt. Matthew J. Bablitz

DURING my last night FAM hop of the evening, I decided to take my student to a nearby Air Force base, rather than the usual Navy OLF. Upon initial contact with the Air Force tower, I asked if they had room in their landing pattern for a T-34. The controller said he was working a couple of C-130s on TACAN approaches, then cleared us for touch-and-goes.

As we approached the five-mile initial, I had mixed feelings about sharing the pattern with C-130s. I wondered if the C-130s wake turbulence would be a problem. Could my awesome "Turbo-Tormentor" handle a blast of it?

Not to worry, I thought. I've landed behind DC-9s and 727s at the regional airport without the slightest bump. Why should C-130s be any different?

We entered the pattern, and my student and I both did a few touch-and-goes. Everything was working out just right, except my student's no-flap landings. He was having trouble with his flare and touchdown, so I took the controls to show him how.

As I hit the abeam position, I reported, "180, gear down and locked, departing C-130; cleared for touch-and-go." I rogered, delayed my approach turn a bit and began the descent.

Approaching the 90 degree position, I saw the C-130 starting his turn toward the downwind. We'll have close to three minutes of separation between us. And just in case we don't, I'll come in a little high. That'll keep me above any turbulence that may have lingered.

From the 180 to the 90, my strategy seemed to be working. The air was smooth as glass. At about 150 feet AGL, on short final, I reduced power to land. Then just as I retarded the PCL, wham! We were thrown into an uncontrollable 90 degree angle-of-bank turn to the right, then a 90 degree angle-of-bank turn to the left. It was like some sort of monster had grabbed my plane in midair and twisted it from side to side. Control inputs had no effect. All I could do was firewall the power and raise the gear.

It worked. The plane leveled off and flew out of the turbulence. Shortly thereafter, I regained by composure and departed the pattern.

Flying home I knew we could have just as easily ended up as a mishap report with two bodies in a smoking hole because I was using poor headwork.

For a long time it bothered me that I had let myself get into that position. I wasn't being pressured. It wasn't even an operational necessity. Why had I used such poor headwork? How could I keep it from happening again?

The first thing I learned was obvious: big airplanes and small airplanes don't mix. The second thing I learned was to wait at least a full three minutes before landing behind large aircraft, especially if the winds are calm.

The third thing I learned was never quit listening to your "safety voice." You know the one I mean. It's the little voice that starts talking to you just before you're about to do something you shouldn't. It usually says things like "Be careful," follow the rules" and "This isn't safe." The night I flew into the wake turbulence, my safety voice was talking to me, but I chose to ignore it and almost became a statistic. ◄

Lt. Bablitz is a primary flight instructor in T-34Cs with VT-3 at NAS Whiting Field, Fla. Previously he flew SH-2Fs with HSL-36, NAS Mayport, Fla.

NATOPS and

By Lt. Tom Buerk

IT was a beautiful day off the coast of southern California. After two SURGE Operations, one of which included a NORPAC, the blue skies have an almost euphoric effect on the CQ evolution about to take place. After all, you know where the ship is (a bonus if you're used to extensive EMCON), and homeplate is less than 10 minutes away. My War Hoover was riding smoothly. What more could you ask for?

Suddenly, not one but *both* starter caution lights came on. This one is not covered in Big Blue. After notifying the lead and breaking off from the formation, we began looking for some kind of secondary indications telling us whether this was for real. After all, how often do both starter lights illuminate at the same time with both actually being engaged? I never heard of this happening before in our community. Realizing that the NATOPS procedures that call for an immediate securing of the affected engine was just a bit impractical, we decided that the chances of this being real were quite remote. Nonetheless, we cycled the bleed air switches, the starter switches and anything else we thought might help remedy the situation. *None* had

We touched down abeam the LSO platform, felt each of the wires thump underneath our tires and saw the end of the angle come up rapidly.

Common Sense

any effect. With home base just minutes away, the overwhelming majority of our maintenance force ashore and still no secondary indications from either engine, we went toward the beach to get this little "light" problem fixed.

About three minutes away from the ship, the cockpit began to fill with smoke and acrid fumes. It wasn't just a caution light problem after all. "Everybody on oxygen," I said as I turned the aircraft back toward the ship and began wondering how long the engines would continue running with the starters engaged. I felt good knowing the ship was just 10 miles away, but at the same time the pucker factor was a bit high. Then the No. 1 generator failed. "Let's just land this thing," I thought.

Inbound to the ship we let the Boss know our situation and our need for an immediate landing. The pattern was cleared, and I set myself up on a three-mile final. The closer to the ship I got the better I felt, until on short final, paddles came up and told me to lower my hook. Did I forget to lower my hook? I looked over at the handle, which was down but now lit red. "Viking lower your hook" came over the radios from just about every transmitter on the ship, or so it seemed. With less than a quarter of a mile to go, we cycled the handle several times but with no success.

With no time to trouble-shoot, my only hope was that on touchdown the impact will cause the hook to dislodge and snag a wire. But as Murphy would have it, we touched down abeam the LSO platform, felt each of the wires thump underneath our tires and the end of the angle come up rapidly. Realizing that large power changes would probably exacerbate an already bad situation, we added just enough power to get airborne after touchdown. We were told that our hook had been observed cycling halfway down and then up again.

Not being certain if we would be able to lower our hook, we began heading for the beach at about 2,000 feet and 180 knots with the power set fairly low. What was a mere 50-mile transit seemed to be a cross country, given our circumstances. I briefed the crew that at any time the engines could fail and that an immediate ejection would follow. Approximately halfway back to the beach, we were able to reach the circuit breakers for the hook without anyone getting out of their seat. Initially, our hook still would not extend; however, after several attempts our wingman indicated that the hook had lowered.

We decided to continue to the beach for an arrested landing. On final approach both starter lights extinguished; however, the fumes continued. Upon landing at homeplate, the No. 1 engine failed. Postflight inspection revealed punctures in the engine cowling and the adjacent bomb bay door. Inside the cowling there was evidence of fire along with the disintegrated starter. The No. 2 starter had been engaged and overtemped but had not disintegrated. AIMD attributed the problem to a faulty control logic assembly (CLA) and was later able to duplicate the problem.

Lessons learned? I let maintenance considerations play a role in my decision to take the bird home rather then land it on the ship. Even though it probably wouldn't have made a difference in my case, it easily could have. *Just because you come across something that hasn't been seen before doesn't mean that it can't happen.* And finally, even though this emergency was not yet addressed in NATOPS, knowing the starters are electrically energized open, I might have been able to avoid a lot of my problems by securing electrical power. Monday morning quarterback? Yes, but it all reinforces one thought. Knowing your aircraft well enough to respond to situations already addressed in NATOPS is one thing; *knowing it well enough to make sense of the unusual can make the difference between saving the aircraft and losing it.* ◄

Lt. Buerk is the NATOPS officer for the VS-38 Fighting Red Griffins. He has logged over 1,200 hours and 195 traps in the S-3 Viking.

Lt. Douglas Geib
Naval Air Test Center, Patuxent

As the pilot of an A-7E, Lt. Geib was conducting automatic carrier landing approaches to the USS *Coral Sea* (CV-43), which was moored pierside in Norfolk Harbor. Upon advancing the throttle to full power following his fifth approach, he saw a less than normal power response and observed the rpm stabilize well below normal. Lt. Geib cycled the power to check for a stuck throttle, which resulted in the engine power stabilizing at an even lower rpm. Immediately assessing the situation as critical, Lt. Geib declared an emergency and initiated a climbing turn to position the aircraft for a precautionary approach for landing at NAS Norfolk, two miles away. Throughout the turn to final, engine performance continued to deteriorate.

Lt. Geib expertly judged the points to lower the landing gear and flaps and made a textbook approach and landing at Norfolk with the throttle full forward, rpm decreasing below 80 percent, and insufficient thrust available to maintain level flight. After landing, Lt. Geib was advised by the control tower that a large amount of fuel was streaming from his aircraft, which he shut down.

Postflight inspection revealed a severe leak in the main fuel line connection that supplies fuel to the engine. The potential for an airborne fire or total loss of power was extreme, and only his prompt action prevented a critical situation from becoming catastrophic.

BRAVO ZULU

LCdr. Richard McCrillis
VFA-131

Operating as part of a joint Franco-American detachment at Hyeres Airfield, France, LCdr. McCrillis was returning to the field after a low-level strike escort mission when his F/A-18A's landing gear malfunctioned. The right main gear folded on touchdown, resulting in a severe swerve and wing drop.

Responding immediately, LCdr. McCrillis controlled the aircraft by using rudder, aileron and nosewheel steering, while adding full afterburner power to initiate a go-around. After confirmation by his wingman that the right main gear was not aligned fore and aft, LCdr. McCrillis reviewed NATOPS procedures and decided on a fly-in arrestment. He flew a flawless arrested landing, holding the right wing off the ground as long as possible and maintaining centerline with rudder and full-gain nosewheel steering. The aircraft sustained minimal damage.

Continued

(Left to right) Capt. Clifford Muzzio, Cpl. Martin Todd, AT3 Larry Settle, Capt. Richard McKenzie, Jr.

Capt. Clifford Muzzio, USMC
Capt. Richard McKenzie, Jr., USMC
Cpl. Martin Todd, USMC
AT3 Larry Settle
HMM(C)-164

While conducting a routine NATOPS check ride from USS *Peleliu* (LHA-5), Capt. Muzzio (aircraft commander) retarded the No. 1 engine condition lever (ECL) to the detent. Capt. McKenzie (copilot) correctly responded to the simulated single-engine failure, and a 70-knot, 300-foot approach pattern was established. As the CH-46 turned downwind, something felt different in the aircraft, and both pilots looked down to see the No. 2 torque drop to zero. Capt. McKenzie lowered the collective to maintain rotor rpm (Nr). The No. 2 torque rose momentarily and then immediately dropped back to zero. Capt. Muzzio, meanwhile, moved the No. 1 ECL back to FLY noticing the Nr droop to 94 percent.

Capt. Muzzio took the controls, lowered the collective and set up for an autorotation to the water. Nr returned to 100 percent, and when collective was pulled, both engines came back on the line, though No. 2 torque was fluctuating.

As Capt. Muzzio turned toward the ship, a transmission chip light illuminated. Capt. Muzzio smelled something burning and made a Mayday call to the ship. Pri-fly cleared the Sea Knight to land on spot 2 or spot 4.

The transmission started howling, indicating an internal deterioration. Capt. Muzzio made an emergency landing between spot 2 and spot 4. The crew shut the aircraft down immediately upon landing. Postflight inspection revealed large metallic particles in the chip detector that had come from the No. 2 sprag clutch.

1st Lt. James McCary
VMA-513

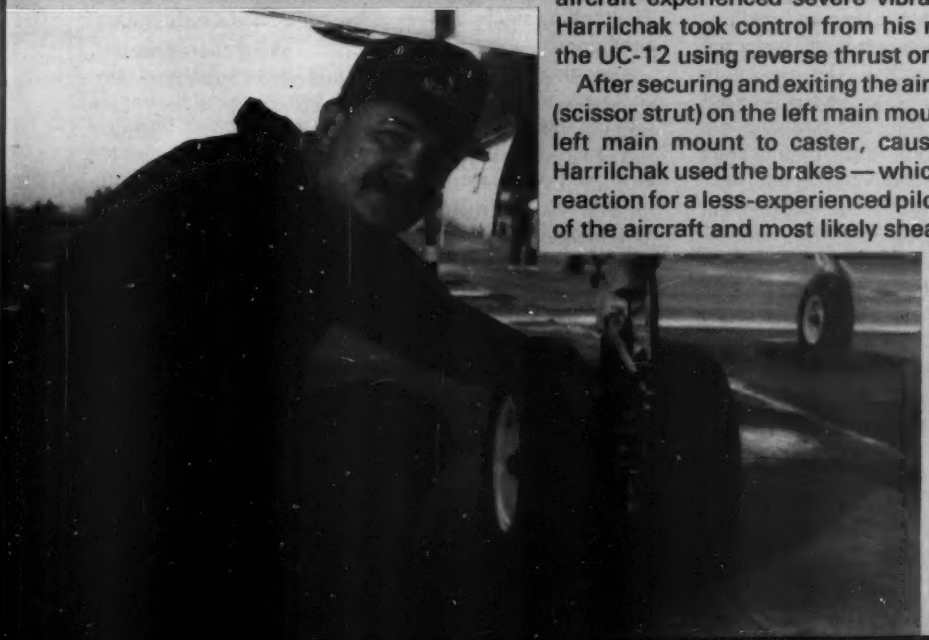
1st Lt. McCary was flying as a wingman during a low-level training mission. Approximately 13 minutes into the low-level, 1st Lt. McCary saw and felt the windscreen of his AV-8B explode as a 4-pound turkey vulture struck the aircraft. Bird remains and windscreen fragments filled the cockpit. 1st Lt. McCary regained his situational awareness and started a climb.

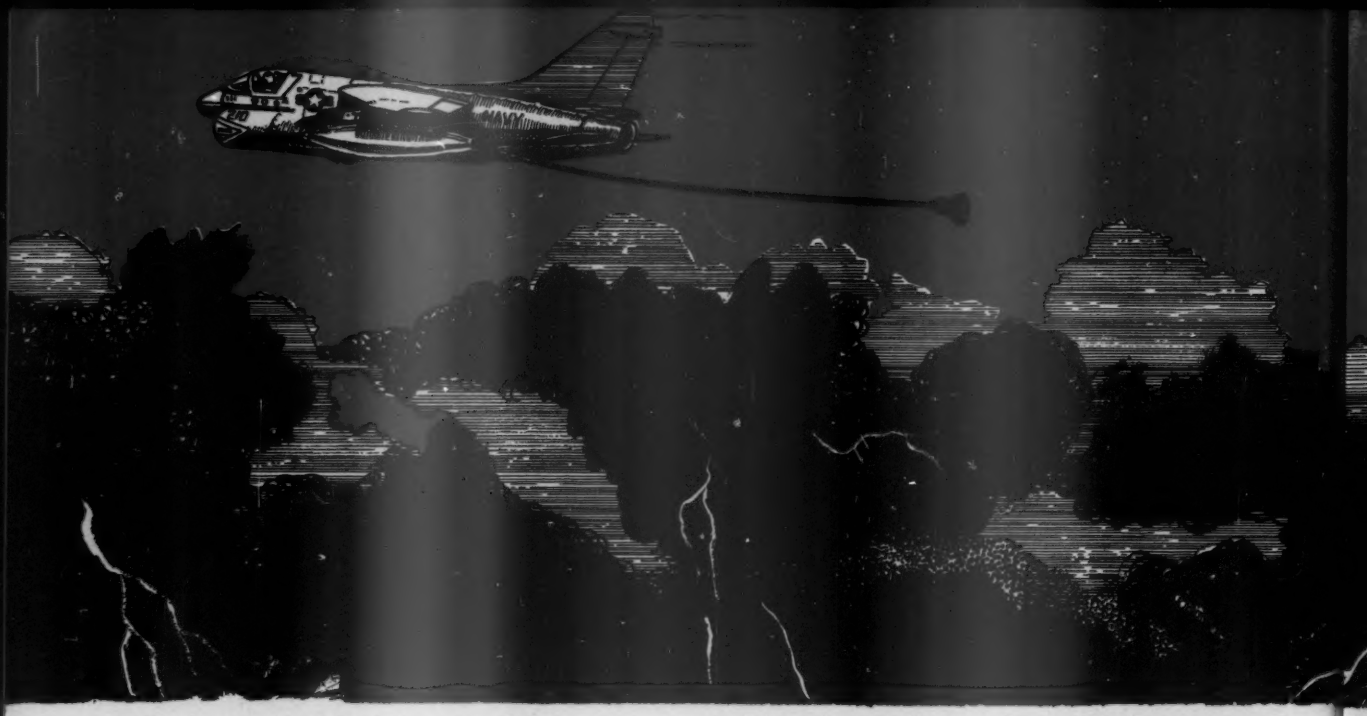
Maj. Pat Wheeler, the flight leader, rendezvoused on 1st Lt. McCary and led him to the closest divert field, Keesler AFB, Miss. The flight maintained 250 knots and 2,000 feet AGL en route. Maj. Wheeler set 1st Lt. McCary up for a 10-mile straight-in, whereupon 1st Lt. McCary conducted a successful slow landing.

LCdr. Robert Harrilchak
NAS Norfolk

LCdr. Harrilchak, an FRS UC-12B NATOPS instructor pilot, was on a routine training flight. During the final landing roll-out, the aircraft experienced severe vibrations. Reacting quickly, LCdr. Harrilchak took control from his replacement pilot and stopped the UC-12 using reverse thrust only.

After securing and exiting the aircraft, he found the torque knee (scissor strut) on the left main mount had failed. This allowed the left main mount to caster, causing the vibration. Had LCdr. Harrilchak used the brakes — which would have been the normal reaction for a less-experienced pilot — he would have lost control of the aircraft and most likely sheared the left gear. ◄





"NICE hits, Intruders! BDA 100 over 100. Y'all have a safe trip home." Those were the words of the airborne FAC after he witnessed the impact of live MK 82s from our four A-6Es. We had just completed half of a 1,500-mile power projection strike. We had only been in WestPac for a week, but the staff had the pedal to the metal during this battle group evaluation. When the contingency for a long-range, carrier-based night strike was presented, naturally the telephone in the all-weather ready room was the first to ring.

Mission Accomplished . . .

I was the bombardier/navigator in the alternate lead aircraft. My pilot was a senior member of the air wing staff, so naturally I felt a bit of relief, in addition to the usual exhiliration, when I watched our bombs impact on target under my forward looking infrared (FLIR) reticle. The navigation problem had been relatively simple, but my inertial was not cooperating that night. I was navigating and bombing in a degraded mode. That was not the only problem my pilot and I would encounter before our night trap aboard "mom" later that evening. I was soon to be reminded that "mission accomplished" meant more than bull's-eye hits.

The strike began a bit roughly for two reasons: the launch sequence plan and the weather. The tankers were not all launched first as planned. Consequently, much precious fuel was burned before push time by orbiting Tomcats and Intruders. The "Tanker King" got airborne early, but could only find weather suitable for rendezvous 30 miles northeast of the ship. The initial strike heading was approximately 210 degrees; therefore, 60 miles were added to an already lengthy strike profile. The weather was to vex the strike group for the rest of the evening, as an area of thunderstorms with tops to 30,000 feet lay between the ship and the target. The clouds that hindered the rendezvous grew to form one enormous cloud bank that the strike group was destined to fly in at 26,000 feet for approximately 300 miles. My element consisted of two KA-7 tankers and two A-6 bombers. All elements tightened their formations as they entered the weather. The tanking evolution proceeded "as briefed," only in IMC conditions.

The remainder of the leg en route to the target was tame compared to the first 200 miles. In fact, 45 minutes after the tanking was complete, the weather broke, and all Intruders were surrounded by a glorious starlit sky. Transition to the airborne FAC's control within the restricted area went without a hitch, and each A-6 rolled in for a system dive delivery on the specified target. Accolades and BDA were passed from our "Skyhawk" FAC, and as we pressed home towards "mom," thoughts of "mission accomplished" danced in my head. Who could touch us now? We had rendezvoused in marginal weather, tanked in worse, and dropped bull's-eye bombs with a degraded system! We were bullet-

proof . . . almost. We hadn't considered the FAA.

It seems that the controller would not let the strike group return to the CV on the reciprocal route at FL 320 as planned. Could these be the same amiable folks that handled us inbound to the target? There must have been a shift change. After considerable discussion with Center, we received acceptable routing back to the ship. I didn't relish the thought of reentering the storm system that I had left behind. Also, we would have been a bit better off if we had left the target area with our planned fuel of 14.0; we were off with 12.8 instead.

It wasn't long before we were back in the clouds. The hop was approaching the four-hour mark, and the aircraft was beginning to tire. The FLIR/Laser system overheated and had to be shut down, and the backup doppler NAV system failed. No problem; we were almost there. It looked as if we would be below Charlie fuel on the ball, even with a ready deck and random vectors to the final bearing.

It seems that Strike was concerned about our fuel state, and an E-2 vectored us to join on a KA-7 in a "clear" area 20 miles southwest of mother. We readied the aircraft for descent. That's when we discovered that defog blew copious amounts of *cold* air! Great — that would help a lot in the hot, humid air at three-quarters of a mile astern of the ship. Well, our first concern was finding the KA-7 in the clear area. Seconds after the E-2 gave us our third or fourth vector call, we broke out in what can best be described as a "bowl" of clouds with a KA-7 at our 1 o'clock and three miles. That green "twirly" was the sweetest sight that I had seen in quite some time. I took another glance at the fuel gauge and realized that my previous estimate of "just under" Charlie on the ball was rather optimistic. We gratefully took 2.5 from the Corsair, and I have never uttered a word against Hummer or Corsair drivers since.

We had to dodge lightning on our vectors to the final bearing, but it didn't seem to be raining much at four miles astern. But, then again, it was rather difficult to see anything.

Almost

By Lt. R.P. Papadakis

Could the cloud bases have been below 1,200 feet? It became apparent at three miles that our worst fears were confirmed. Our cold air defog was ineffective; our windscreen had fogged over. The small quarter panel by the lower left-hand portion of the pilot's glare shield was the only portion of the windscreen that was clear. After the hop, my pilot told me that he flew the ball through that small quarter panel. I'm afraid that we relied upon the LSO for lineup most of the way. The drop lights did not burn their way through our windscreen until "in the middle" to "in close." We called "no defog" on the ball, and the LSO talked us to an OK-three wire.

During the flight debrief, one point clearly shone through a number of times. The old saying "it ain't over till it's over" couldn't apply more to an environment such as that encountered in carrier operations. The mission is not accomplished with off-target jinking. The mission is accomplished after the flight is thoroughly debriefed and the last "I" is dotted on the yellow sheet. Then, and only then, can the aviator relax a bit and exclaim, "Roll the movie!" ◄

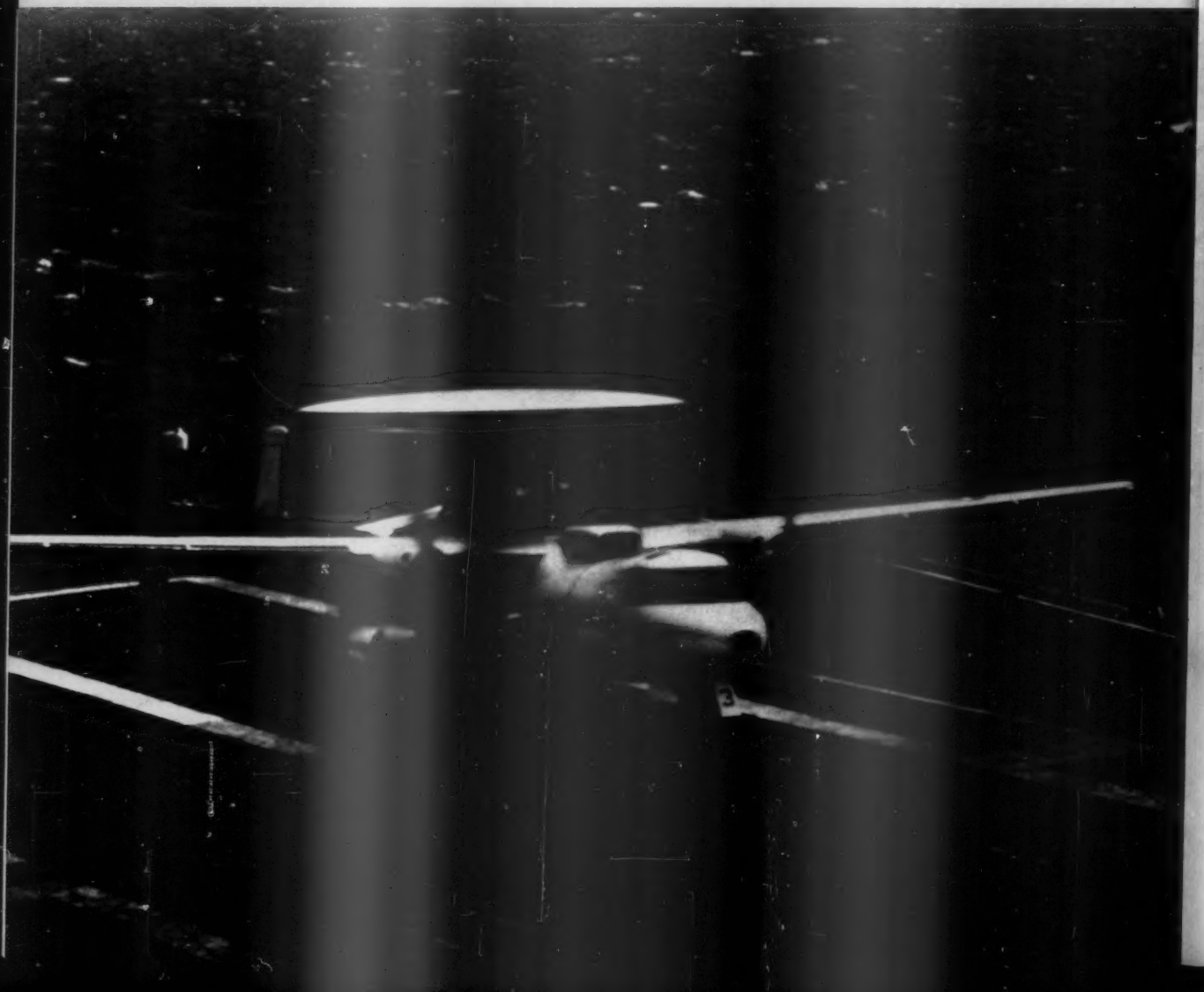
Lt. Papadakis is a B/N currently assigned to VA-95 as the schedules officer. He has more than 1,000 hours and 230 traps in the A-6.

Getting

AS squadron safety officer I felt overqualified to stand this particular day recovery pri-fly watch. To make things worse, I had failed to make the flight schedule in any capacity other than this humble duty. As our squadron E-2C turned off the 180, I positioned myself in the tower to watch the critical portion of the landing, from the 90 to touchdown. From my viewpoint the aircraft flew a decent pass with a little come-down to a two-wire. But before I could turn to leave, the Air Boss called out those not-so-pleasant words, "Hummer rep!"

Hurrying up to the front of the tower, I followed the Air Boss's accusing finger to the E-2 positioned with its starboard wing several feet over the foul line. Staring at the E-2 wing tip was a plane captain seated in the cockpit of an F-14. The E-2 wing was directly over the F-14 nose and dangerously close to the plane captain. Unable to see the rollout from my vantage point, I had incorrectly assumed that the landing had been uneventful. An accident had been avoided only because two low-nosed F-14s had been parked on the foul line below the path of the errant Hummer wing. A different aircraft parking arrangement would have resulted in serious damage.

The realization of just how close our squadron had come to spoiling our excellent safety record propelled me to action. Our ship has a 100-foot wide landing area, bigger than some, smaller than others. With an 80-foot-7-inch wingspan, the E-2 has a little less than 10-foot clearance from wing tip to foul line. This is less than the E-2 hook-to-ramp clearance.



g Out of Line

By LCdr. Mark D. Sullivan

Carrier aviators pride themselves with being able to hit a moving deck with a target area of about 150 feet in length and 100 feet in width. In close, most jets can afford to let minor ball corrections and aircraft attitude adjustments dominate minor lineup corrections to a greater extent than the E-2 can. In the typical jet approach, minor lineup deviations from the ramp through rollout have no adverse effect. Often the limitation on jet lineup is the off-center engagement distance, 20 feet on our carrier. Any landing made outside this off-center distance results in a mandatory cross-deck pendant change.

The scan pattern for the E-2 during final landing phase cannot allow the lineup ingredient to drop out at any time. Ball corrections can be comparatively simple compared to lineup corrections, especially past the in-close position. The T-56 turboprop engine allows almost immediate response to below-glide slope conditions. But slow aileron response in the landing regime, coupled with a settle-on-lineup tendency, can make final airborne lineup adjustments tricky at best. In addition, as airspeed decreases during rollout, drift corrections are made difficult by proportionately decreasing rudder authority.

Faced with the physical facts of aircraft dimensions, what can be done to avoid the lineup hazard that continues to face the E-2 and C-2A aircraft? The answer lies in increased air crew and LSO awareness of the handling characteristics of the E-2 during the final phase of landing and of the need for precision lineup control. Knowing specific ship flight deck dimensions, the variables then become wind direction, wind velocity and air mass consistency (burble). Flap settings and power settings are also factors but generally depend on wind velocity.

Although many carriers park aircraft on both the left and right sides of the landing area, the typical E-2 lineup mishap involves the right side foul line. This right side problem is presented here although lesser arguments can be made for the left side. Bolters and touch-and-go landings are another case when lineup control is essential until safely clear of the flight deck. Several factors contribute to the right drift problem.

During periods of light natural wind, carrier speed creates an artificial wind over the deck. This artificial wind tends to flow down the main deck instead of the angle deck, creating a starboard or axial wind. Without any other inputs the aircraft tends to point into the wind, to the right. Right wing down and top rudder may be necessary throughout the approach to counter this crosswind.

Any power reduction without a corresponding left rudder correction results in the aircraft nose slewing to the right. Final power reductions are often necessary crossing the ramp in order to counter increased lift from ground effect forces. Power reductions during rollout will also add to this nose right effect.

LSO assistance with in-close lineup calls is more difficult in the case of a left-to-right drift due to the angle of aircraft presentation. This perception problem is more pronounced during night recoveries. LSOs must be alert for any left-to-right drift, especially during axial wind conditions. FCLP training needs to emphasize precision lineup control as much as precision ball control. Fifteen feet in lineup can be the difference between a mishap and a normal rollout.

The lineup problem can be compounded by other extreme conditions that make normal landings difficult. High winds, pitching decks and aircraft emergencies can each make lineup corrections even more complicated. Variable deck movement tends to effectively reduce landing area size. Emergency situations such as single-engine landings tend to reduce aircraft response to pilot lineup correction inputs. Knowing aircraft handling peculiarities in specific environmental conditions will allow air crew to apply proper corrections in a timely fashion.

Precision landing includes setting lineup limits and strictly adhering to them. On our ship the E-2 nose gear to main mount distance is essentially identical to our maximum wing tip to foul line distance. Our squadron lineup criteria is that the port main mount must remain on the port side of the landing center line, otherwise the wing tip has crossed the right foul line. An OK three-wire pass must include precision lineup control until the aircraft stops. LSOs, when working the Hummer, remember, you can take it high, low, fast or slow, but it's got to be on center line. ◄

LCdr. Sullivan is the safety officer for VAW 126. He has over 3,000 hours in E-2C and C-2A aircraft.

It's the people who do nothing who are most sure that nothing can be done.

Ace L.

. . . The aircraft suddenly snapped left more violently than before. It departed the left side of the runway, twisted off the landing gear and caused the No. 3 propeller to touch the ground . . .

Pilot in Command VS.

By Lt. William A. Goss

I was scheduled for a few hours of touch-and-gos with a copilot who rarely agreed with anything I said. We had just had a heated disagreement about the previous day's post-maintenance check flight.

I hoped that this flight in the P-3C Orion whould somehow improve our relationship because the landings and takeoffs demand clear communications and understanding among the crew.

I was in the right seat, and the copilot was in the left seat. Our plan was to give the copilot eight touch-and-gos with the last being a full stop to drop him off. At this time, the new no-P (prior to third pilot designation) would leave his seat on the forward radar console and take the left seat to get his first squadron indoctrination in the landing pattern.

A recent addition to the squadron indoctrination notes was this statement: "Any PPC (patrol plane commander) could simulate his own three-engine landing." The left seat PPC made some nice touch-an-gos on the 12,000-foot runway. It was 150 feet wide, 50 feet narrower than either of us were used to. The left seat PPC had previously requested that he simulate his own three-engine landing to a full stop. I had no experience as instructor in the right or left seat of the aircraft.

While in the pattern, the copilot and I had been lulled by the beautiful day, the smooth touch-and-gos and our own efforts at resolving our own internal conflicts with one another. It was less than an ideal posture for a simulated emergency.

Both of us considered a simulated three-engine landing a relatively easy thing to do. Neither the copilot nor I had learned the subtle things that an instructor pilot (IP) might do during this maneuver to dramatically reduce controllability, something that could happen in this configuration at airspeeds below VMC ground of 102 knots. Particularly important would be an IP's regard of positive versus negative angles. An IP would make sure the power lever was placed in the beta range where a beta light would be assured. A beta light guarantees that a propeller's low pitch stops have been released, which in turn allows for negative instead of positive thrust and creates normal prop reversing.

Rolling final with the No. 4 engine set near flight idle to simulate the engine out, the aircraft was set up nicely on the extended runway centerline and with proper airspeeds.

Touchdown was ideal, near the numbers and on centerline. I commended the copilot on his touchdown and cautioned him to take it easy going into reverse, especially since we had a long way to roll out before turning off the runway to drop him off. After rolling out at least 2,000 feet, the copilot lifted all four power levels up over the ramp. He pulled power levers No. 1, No. 2 and No. 3 toward maximum reverse. No. 4 power lever was not pulled back far enough to get a beta light, indicating that thrust would still be positive rather than negative on that engine.

Unfortunately, this fact was not announced by the flight engineer nor recognized by any of the pilots. The aircraft had slowed to below VMC ground, meaning that the rudder was about to lose all effectiveness in maintaining centerline control. As the P-3C yawed slightly left of centerline, the copilot fed in the last remaining inch of right rudder. This action momentarily reestablished centerline, but had unfortunately wasted our last remaining bit of rudder authority. The right rudder was now tight against the floor board. A fraction of a

Pilot at the Controls

. . . In less than two seconds our left main mount had gone four feet off the runway and in the dirt at a speed of 80 knots. What I would have given for a little more concrete! . . .

second later the aircraft snapped violently to the left of centerline.

As a right seat pilot and pilot in command (PIC), I now stated loudly that I wanted to be pilot at the controls as well. In less than two seconds, our left main mount had gone four feet off the runway and in the dirt at a speed of 80 knots. What I would have given for a little more concrete!

After a momentary struggle on the controls with the copilot, who thought it was his responsibility to get us out of this mess, I set max power on engines No. 1 and No. 2 and made a corrective swerve back to the right toward centerline. I felt that I had resumed control of the aircraft and started letting some air out of my chest.

The aircraft suddenly snapped left more violently than before. It departed the left side of the runway, twisted off the landing gear and caused No. 3 propeller to touch the ground. That instantly tore the entire 4,600-SHP engine prop assembly off the aircraft. I remember seeing it out of the corner of my eye as it flew by over the right wing.

It could not have taken more than eight seconds to go from being perfectly on centerline to having the left main mount four feet off the side of the runway, to having reestablished control and having moved back toward the runway, to having finally snapped to the left and ultimately crashed. E-handling the engines and evacuating the badly damaged aircraft probably took another 15 seconds. Luckily, no one was hurt.

What caused the final disastrous snap to the left? I found out two days later — the flight engineer had reached up and fuel-chopped the No. 1 engine on which I had max power set in an effort to move back to the right toward centerline. The flight engineer was concerned that the No. 1 prop might contact the "6,000-foot remaining" marker. He had mistakenly decided that the NATOPS procedure for a prop tip hitting a snowbank while taxiing was to cut off the fuel rather than feather the propeller. E-handling an engine feathers the prop; this state might possibly have been controllable. However, fuel-chopping the engine results in an instant flameout with a flat blade angle and windmilling propeller. The resulting drag, with a windmilling propeller condition on the left side and positive thrust on the right side, now made the crash to the left impossible to prevent.

The aircraft was the skipper's, and one of the newest in the fleet. It took a severe beating, misalignment of the fuselage in particular. After a five-month maintenance effort, it was test flown and certified once again for safe flight.

Immediately after the mishap, crew members were separated and prevented from talking to one another. The accident investigation, JAG investigation, medical inquiries, Field Naval Aviation Evaluation Board (FNAEB) and aircraft repair work were time-consuming.

The grand finale of the three-month ordeal was the FNAEB

making me realize the simple point that, no matter what other crew members may do to cause an aircraft mishap, it is not their responsibility. The responsibility for the safe completion of a flight or for a mishap rests solely with the man who signs the "A" sheet: the PIC. Although that was a bitter pill to swallow, it proved to be a valuable lesson.

Other lessons I've learned as both a P-3 pilot and as a PIC: First, if you don't see the beta lights during a full-stop landing after properly positioning all four power levers, cancel any further simulations, prepare for a swerve and discontinue use of asymmetric reverse, if possible. Use of asymmetric reverse is preferable at speeds above VMC ground so that there is still rudder to keep you on centerline. Don't initiate rapid use of asymmetric reverse at low speeds.

Don't assume the crew knows what you are thinking and you know what they are thinking. Communicate. If efforts to communicate with certain crew members fail, recommend a crew change before a communication breakdown causes an accident.

Ask yourself: "What if?" The more "what if" scenarios you have reviewed with yourself and with your crew, the less surprised you will be when a "what if" becomes a "what now?"

Land on centerline and stay on centerline no matter what. With this as a forced habit pattern, you will tend to recognize and correct unsafe ceterline deviations sooner.

Always take into account runway length and especially width whenever making a landing, particularly when making engine-out landings. If the runway is narrower than usual, especially if it has a soft dirt shoulder rather than concrete, use extreme caution or reevaluate the value of engine-out training against the increased risks. Avoid using asymmetric reversing at low speeds because rudder effectiveness decreases very rapidly as the aircraft slows. Brakes, under asymmetric reversing conditions at low speeds, are much less effective than you might imagine. My right brake was fully applied, resulting in a locked brake, and almost all the rubber was

taken off the tire. All of the rubber missing represented the uncontrolled yaw of the aircraft.

If you are departing the side of the runway, use the nose wheel steering regardless of your speed. The primary design purpose of nose wheel steering is to aid in keeping the aircraft on taxiways and runways. Warning not to use nose wheel steering at high speeds is for under normal, non-emergency conditions.

Make sure all pilots on board know that when the PIC says, "I've got the airplane," controls need to be passed immediately. Intentionally delaying the passing of aircraft control to the PIC in situations where split seconds may count is not only unsafe but insubordinate. On the other hand, the PIC should realize that despite all the training, pilots are human. For example, sudden fright or confusion may delay the passing of aircraft control to the PIC when he calls for it. Always be ready for this reaction from both pilots and flight engineers, especially during landings and takeoffs. Two pilots working the flight controls at the same time invariably cause problems. As PIC, stay ahead of the aircraft.

If squadron standardization notes say that you may do something, this does not necessarily mean you have to or should do it. Don't exceed your personal flying safety envelope. Your personal flying envelope changes day to day.

Insights I gained from that mishap have guided me safely through more than 1,300 hours of multiengine instructing in the T-44A.

When we sign for an airplane, our commanding officer expects us to use our heads, maintain situational awareness and fly within, not beyond, our capabilities. If things get out of control, the skipper is going to expect an organized and NATOPS-guided explanation on how it got out of control and how you, as PIC, exercised sound judgment in restoring control. He will also expect an acknowledgment, however subtle, that as PIC you assume full responsibility for any problems that occur while in flight.

Being involved in an aircraft mishap as PIC is one of the most miserable experiences that one can go through. Do whatever you have to do to avoid placing the aircraft and crew in a potential mishap situation. However, if you end up in a mishap and survive, take your licks, learn as much as possible, get on with your life and don't give up flying. It will not only become fun again but will probably become a lot safer for you as well. You cannot make your accident "unhappen." To quote my old XO's favorite expression, "You can only play with the hand that's dealt you." ◄

Lt. Goss is T-44 model manager with Training Squadron 31 at NAS Corpus Christi, Texas. Previously, he flew P-3Cs out of Rota, Spain.

Today's Lecture:

"Headwork Takes a Holiday"

Anonymous

Gentlemen, welcome to our "Back in the Saddle" safety stand-down brief. As part of my "Head Up And Locked" constructive criticism series, I'm going to describe some actual occurrences.

A VETERAN of four cruises and his nugget RIO man-up an F-14 in the dead of winter for a three-plane intercept hop. The canopy and topside of the aircraft are covered with frost. The pilot considers the dangers associated with having the plane captain scrape away the frost on the entire canopy and elects to have only the front windscreen and two small holes on the port and starboard side of the main canopy alongside the pilot and RIO seats cleared of ice. He correctly assumes that air passing over the canopy will get rid of the rest of the frost while airborne. Fifteen minutes into the hop he wonders why the canopy hasn't cleared and realizes that the frost has indeed gone away but the canopy polish will remain intact for some time to come.

THE members of an F-14 crew man-up for a night services hop. Recently, the squadron had been feeling the heat from the higher-ups because of minor course rules violations. The pilot is given clearance to take off and begins his roll. At rotation speed he hears the tower transmit, "Take position and hold." Unsure if this transmission was meant for him or his wingman — who is just behind him in the hold short — he becomes confused as to whether he received takeoff clearance, and decides to abort rather than risk a violation. He taxies back to the hold short area and clears up the misunderstanding with the tower.

He decides to try again. On engine run-up the right brake fails, and he aborts the takeoff sequence prior to brake release. Taxiing clear of the runway, he does the first intelligent thing of the night and requests the crash crew look him over to determine the situation. Before the crash crew arrives, the left tire blows. The crash crew motions, "hot brakes, pin the aircraft, and shut down." The air crew egress and find both mainmounts flat and smoking.

The crash crew pulls out portable fans to cool the brakes. The pilot asks the senior crash-and-salvage person if that isn't tantamount to "fanning the flames." The crash crew chief pulls himself erect and admonishes the pilot that he "knows his business and can take it from here."

The crash crew logs actual firefighting OJT when flames erupt from the port mainmount as the despondent crew looks on. Both brakes have melted, and the port mainmount has become fused with the axle. Had the brakes held on the second takeoff attempt, they would have been retracted into the wheel well, and the aircraft and crew would very likely, never have been heard from again.

AN F-14 pilot with 3,000 total flight hours takes the duty runway prior to takeoff on a PMCF. It is single-runway ops, and in his haste to depart, he forgets to wipe out the cockpit with a control check until just after brake release. He aborts the takeoff, planning to stop quickly, accomplish his control checks and be on his way. In his haste, he locks the port brake and blows the tire. This problem shuts down the entire base. The CAG, immediately behind the PMCF pilot in the hold-short area, is on a tight schedule to get to the West Coast; he is not amused.

Continued

OK, can anyone guess what two things each of the incidents have in common?

First, the pilot in all cases exhibited an astonishing lapse of headwork, and second, the pilot in each incident was none other than me, your friendly safety officer.

I sat down this weekend and wondered what I could say to make an impact on you today. I thought that real instances that had occurred to people you knew could point out the fact that we all have suffered lapses in headwork at one point in our careers, however long or short the career has been. Headwork is an abstract thing. It appears as an item on each grade sheet but I have yet to attend a lecture on "How to Do Good Headwork." I have never seen a command designate a subject matter expert on the topic. But headwork is the one thing that makes the final difference in whether in operating our planes safely or unsafely.

In 1987, the F-14 community lost seven jets and two aircrew. Maintenance error was not a factor in any one of these. Pilot and supervisory error were the problems. That means poor headwork directly contributed to the loss of seven training aids.

What is good headwork? I like to think it is the ability to think big picture in a small cockpit. But it is an intrinsic thing that can *most* commonly be shown and taught when its alter-ego, bad headwork comes around. That's why its hard to teach. Too often we all have to make a mistake in order to learn from it.

Which brings up the bad news about headwork. Aviators possess another inherent trait: We tend to view another's misfortune as something that couldn't happen to us or "We would never make a mistake as stupid as he did." And this is the thing that drives safety officers and COs nuts.

I'd like to share with you something that made a great impression on me. When four of us were picking up the pieces of our last aircraft mishap, I went through several psychological stages. The first day was shock that something like this had happened and that we had lost two of our friends. The second day I was extremely busy and fatigued. I was immersed in the logistical problem that faced us, recovering wreckage, combating the elements of summer in a swamp, providing food, rest and equipment for the troops, and keeping in touch with home base. On the third day I had my first chance to look around and objectively analyze the events that had occurred. And I remember mentioning that if I had it to do over again, I would put all of you on a bus and visit the crash site as soon as possible. I didn't want you to be there to help with the manpower problems or to lend moral support. I wanted you to experience the enormity of what had happened. I wanted each of you to gain an appreciation for the consequences of an error in judgment. It was something that could only be appreciated, truly known and felt, by being there amid the wreckage.

Here's the point. Before all you new guys came here, this squadron had a little code phrase that I haven't heard in a while: "Compartmentalize." When you go back to flying, jump into your compartment. When someone is about to go flying, try hard not to pull him out of his compartment. And commit yourself to the project of teaching yourself that elusive commodity, good headwork. ◄

Any way you look at it, this is the number to call when you have a safety question that needs answering. It's a toll-free safety hot line available 24 hours a day for use in the continental U.S., Hawaii, Puerto Rico

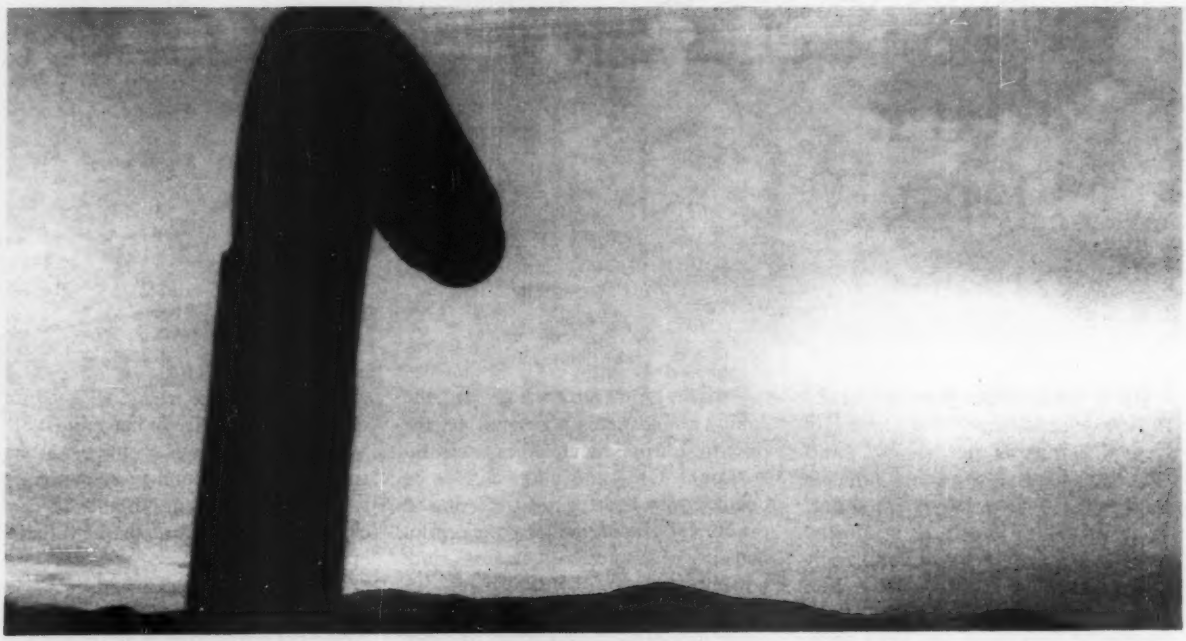
1-800-HOT-SFTY

and the Virgin Islands. Anyone in the Virginia or the D.C. area should call Autovon 564-3520 or (804) 444-3520. So, don't stand on your head if there's a problem. Give us a call — we're here to help.

. . . Since we were in a KA-6D without a radar, I scanned the horizon and saw what looked like mountain peaks *ahead* and *above* us . . .

It Can Happen

By LCdr. Richard McGraw



THE pace was moving along for our air wing bombing det at NAS West. With three weeks of excellent weather, the training was sharpening our skills for the real thing. Flying the night overhead tanker, up for practice plugs, was not the best hop of the det. Plenty of new pilots in the wing needed the practice. The night went by quickly. Approach asked if we would help train some new controllers in night ASR approaches. We had completed our mission and had plenty of fuel left, so we agreed.

The first ASR to Runway 31 was uneventful. On the missed approach, however, a division of F/A-18s entered the ASR pattern. We climbed out following our departure instructions to 7,000 feet MSL on a heading of 040 degrees. It seemed like a long time, but the controller finally turned us to a downwind heading of 130 degrees maintaining 7,000 feet. At 9 NM we were cleared to descend to 6,000 feet and given a heading of 150 degrees for pattern adjustment. After leveling off at 6,000 MSL, we saw our radar altimeter decreasing from 4,000 feet AGL.

Since we were in a KA-6D without a radar, I scanned the horizon and saw what looked like mountain peaks *ahead* and *above* us. I told my pilot. He looked up from scanning his instruments and agreed. A quick glance at the approach plates showed no spot elevations for the area we were flying in. The radar altimeter, however, was now decreasing through 1,000 AGL. With no corrections issued from the controller, we initiated our own climb and began a right turn back to the field.

On the ground we were surprised to learn from the controller that anytime an airplane was outside the 10 NM radius, its altitude should be 7,600 MSL. A review of the radar tapes determined that we had come within 2 NM of a 5,875-foot peak. The PAR radar was down, and the computer used to simulate approaches was also down. The only way local controllers received training was to monitor actual approaches. In this case a training situation with one airplane turned into a full blown job, involving five airplanes in the night pattern plus returning VFR traffic.

The margin for error at different fields varies. With high terrain surrounding airfields, extra precaution is necessary. A one-mile error at some bases can lead to tragic results. Also, controllers can make costly errors. We are the final authority in the cockpit, and it's our responsibility to take the appropriate action if the control of our aircraft is questionable. If we don't, we may become another statistic. ◄

LCdr. McGraw is an A-6 B/N who has over 1,500 A-6 hours. He is currently VA-95's AV/ARM division officer.

"I Thought You Checked It!"

"I didn't check it — I thought you checked it"
"Damn!"

By Lt. David Staser

HOW many times have we heard this excited exchange? When time gets critical, aircrews get rushed, and routine procedures are abbreviated or disappear altogether. A case in point: Four aircraft were turning up on the homefield tarmac for a late-night FCLP period at a nearby OLF. The skipper was in the lead, so everyone hustled to look good and keep pace. Lead, Dash 2 and Dash 3 started and taxied uneventfully, but Dash 4 had a starter problem on No. 2 engine. Dash 4 called the lead on tactical to tell him the aircraft was down and that the crew would be switching to the spare. The skipper responded, "Meet us out there."

Then the scramble began. The pilot rushed to maintenance control to read the book while the copilot began the preflight of the spare aircraft. The standard S-3 preflight normally starts on the starboard side of the aircraft and progresses clockwise; but due to the location of the spare to the down aircraft, the port side aft was accessible first, so the copilot started there. On the port ESM pod, the copilot found some loose fasteners, so he delayed his preflight at the port wing tip as troubleshooters searched for a ladder. Several minutes had elapsed since the skipper took off, and with each passing minute the anxiety to get airborne increased.

With the errant fasteners secured, the copilot rounded the nose and met the pilot fresh from maintenance control.

"Looks OK," the pilot said as he climbed into the cockpit (referring to the books). He assumed that the copilot had done a **complete** walk-around, since you normally start on the starboard side and end back at the nose. The copilot, a junior member of the squadron, assumed his pilot, a cruise veteran and aircraft commander, had made a "combat" preflight and followed him into the cockpit. Engine start-up and preflight checks were uneventful. With both engines turning, the tension and pace eased. It looked like they would only be 20 minutes late for the bounce period — pretty impressive huh, skipper? The aircraft taxied out of the line, received a smart salute by a harried but watchful plane captain and continued past the hangars towards the taxiway.

Seconds later, as the crew was in the middle of their takeoff checklist, a beam of light flashed into the cockpit from a figure running frantically beside the aircraft. The pilot immediately halted his taxi and was instructed by the winded plane captain to secure No. 2 engine. The pilot complied and conducted an emergency engine shutdown. The copilot meanwhile searched in vain for the reason for the panicked shutdown. The engine instruments looked OK, and a visual check of the engine revealed no sparks, smoke or fire. What could it be? Moments later two troubleshooters emerged from around the engine and gave the plane captain a thumbs up. The captain then turned to the bewildered crew and improvised a signal that explained the problem.

The clamshell engine doors had been closed but not latched. When power was advanced above idle, the high bypass air flow pulled the doors open in a somewhat grotesque flapping fashion. Had the aircraft made it to the runway and takeoff power been set, we would have had one S-3 sans starboard engine doors possibly without trailing edge flaps or a horizontal stabilizer. Had the aircraft gotten airborne before the doors separated, the results could have been catastrophic. Luck, in the form of an observant plane captain was with our rushed aviators; patience and thoroughness were not.

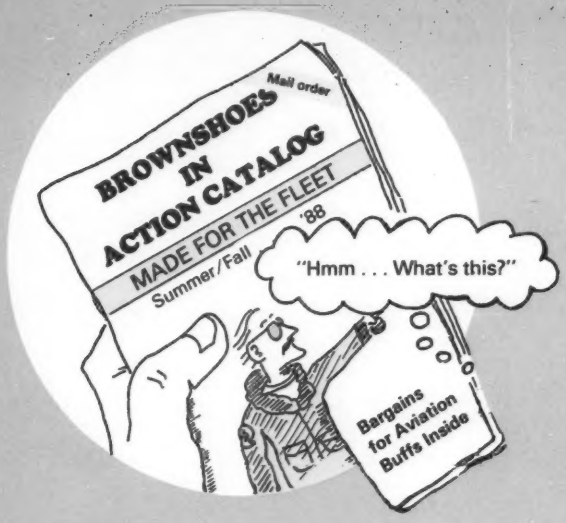
This incident underscores the importance of a proper and complete preflight. It illustrates the necessity that air crews know their responsibilities, communicate and follow time-proven procedures no matter how rushed the situation may be. We've all gotten away with shortcuts. We've made that launch or looked good for the skipper. But sooner or later, in the rush to make it, one of those shortcuts is going to ruin your day. ◄

Lt. Staser is the Safety Officer for VS-38.

BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

Contributed by Lt. Ward Carroll, VT-86



Page 3

*You're on the O-3 level, and the Skipper's looking for you! Use your joystick to avoid him long enough to bring ice from Wardroom One to your stateroom! Action to burn! . . . . . .*Price varies with Air Wing

Page 5

Ever wondered what gouge patches to put on your flight jacket to look like a fleet player? Search no more! We'll have you "mega-salty" in no time with one of our patch assortment sets.

Set #1

T-34C Mentor

NAS Memphis

Navy Wife . . .It's the toughest job in the Navy.

Lexington Centurion

(Set #3 shown)

Set #2

U.S.S. Kidd

Marine Corps J.R.O.T.C.

C-141 Starlifter

I'd Rather be Surfing

Page 12

OPS just said, "Launch the cross-countries!" Where to go? You need the "Lifesaver" of all pubs . . .The IFR-Supplementary Supplement! This handy book easily fits into a Navbag and includes . . .

- *— BOQs with cable TV*
- *— Distance from transient lines to areas of interest*

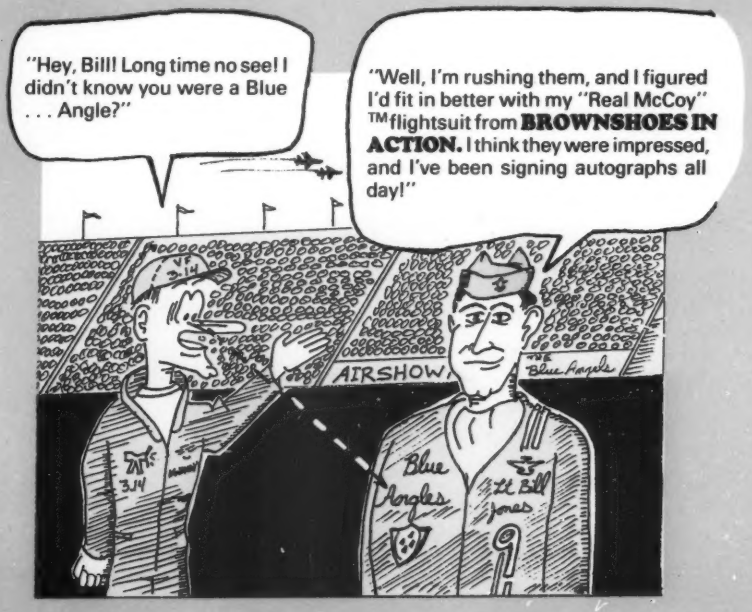
Here's an excerpt . . .

Brunswick NAS, ME KNHZ 43°53.6

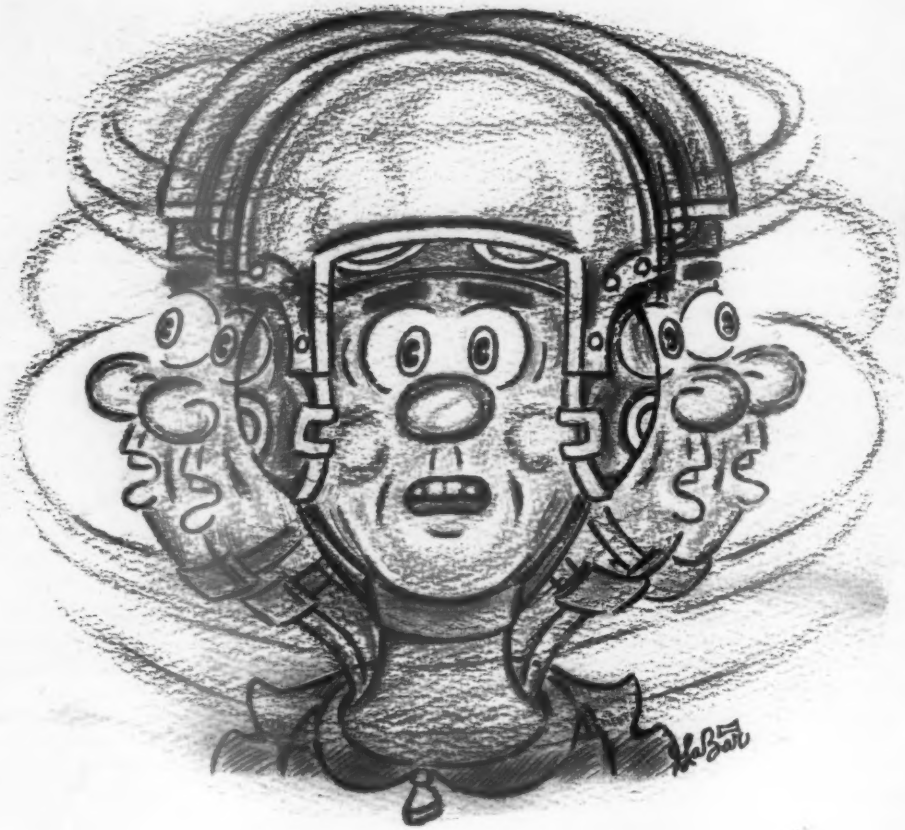
Service — 30 min. req. for lobster deliv.

Remarks — Get your lobsters and leave before your friends see you. Discrete DD-175s available on request.

Don't be the guy who says, "I should've gone somewhere else!"


"Hey, Bill! Long time no see! I didn't know you were a Blue . . . Angle?"
"Well, I'm rushing them, and I figured I'd fit in better with my "Real McCoy" ™flightsuit from BROWNSHOES IN ACTION. I think they were impressed, and I've been signing autographs all day!"
AIRSHOW
Blue Angles
Lt Bill Jones

BE A SWIVEL-HEAD



Be Aware of Rotors, Jet-intakes and Exhausts

Poster idea contributed by ADAN Ratley, VAQ-130, CV-67